

**Food and Agriculture Organization of the United Nations  
Trade and Markets Division (EST)  
Policy Assistance Support Services (TCSP)**

**Analysis of International Investments in the  
Agricultural Sector of Paraguay.**

**(Draft Report)**

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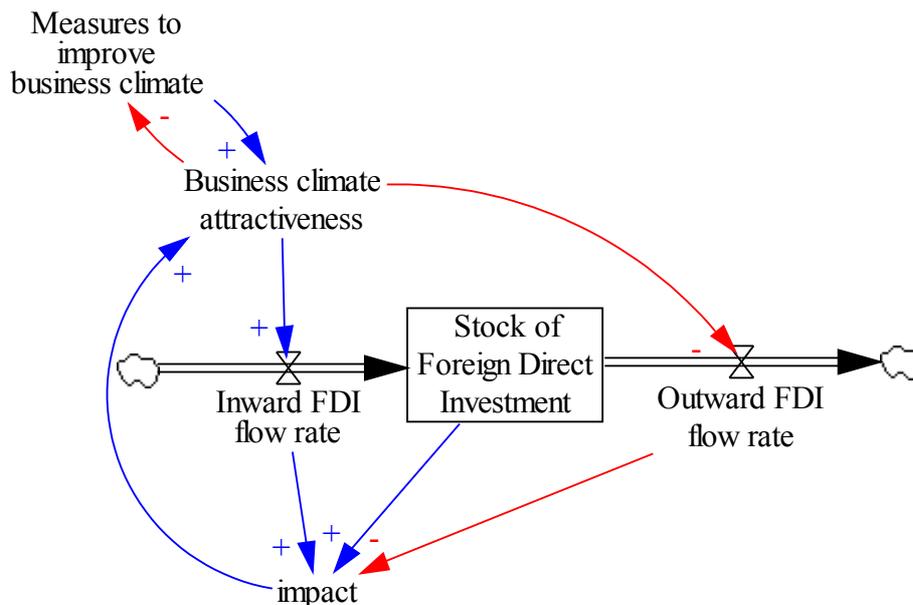
<b>ADM</b>	Archer Daniels Midland Company
<b>CC</b>	Coordinating Committee to implement the PROMECIF
<b>CPI</b>	Corruptions Perception Index
<b>DGEEC</b>	Dirección General de Estadística, Encuestas y Censos
<b>EU</b>	European Union
<b>FAO</b>	United Nations Food and Agriculture Organization
<b>FDI</b>	Foreign Direct Investment
<b>FIAS</b>	Foreign Investment Advisory Service
<b>FVL</b>	Forest Vocation Land
<b>GCF</b>	Gross Capital Formation
<b>GDP</b>	Gross Domestic Product
<b>GoP</b>	Government of Paraguay
<b>HDI</b>	Human Development Index
<b>IBRD</b>	International Bank for Reconstruction and Development. Also WB
<b>IDB</b>	Inter-American Development Bank
<b>IFAD</b>	International Fund for Agriculture Development
<b>IFC</b>	International Finance Corporation
<b>IICA</b>	Inter-American Institute for Cooperation on Agriculture
<b>ILO</b>	International Labor Organization
<b>IMF</b>	International Monetary Fund
<b>LAC</b>	Latin America and the Caribbean
<b>LICUS</b>	Low Income Country Under Stress
<b>MIGA</b>	Multilateral Investment Guarantee Agency
<b>nFVL</b>	Non forest Vocation Land
<b>OECD</b>	Organization for Economic Co-operation and Development
<b>TNC</b>	Transnational Corporation
<b>PROMECIF</b>	Forestry Investment Business Climate Improvement Process
<b>R&amp;D</b>	Research and Development
<b>REDIEX</b>	Red de Inversiones y Exportaciones del Ministerio de Comercio e Industria.
<b>TNC</b>	Trans National Corporation
<b>UNCTAD</b>	United Nations Conference on Trade and Development
<b>UNDP</b>	United Nations Development Program
<b>USD</b>	Dollars of the United States of America
<b>WB</b>	The World Bank. Also IBRD.
<b>WEF</b>	World Economic Forum
<b>WIR</b>	World Investment Report

## I. INTRODUCTION

1. This paper carries out a case study on the extent, nature and impact of international investments into the agricultural sector of Paraguay. The case analyzes the policies, legislation, institutions and other factors affecting international investment in the country. It finally also makes recommendations on how policies, regulations and other factors can be updated to respond appropriately to the challenges facing the agricultural sector in Paraguay.

2. Figure - Simplified model of FDI and business climate dynamics shows a simplified system dynamics model<sup>1</sup> that underlines most of the analyses and discussions presented in the paper. It shows that the inward and outward flows of Foreign Direct Investment (FDI) that changes its stock and generate several types of impacts is influenced by the attractiveness of the business climate to foreign investors. In turn, the conditions that form the business climate can be affected by the intervention measures that governments can take to improve them.

Figure - Simplified model of FDI and business climate dynamics



3. Chapter II of the case study describes FDI (Foreign Direct Investment) in Paraguay in terms of its importance in relation to other countries and the Paraguayan economy, its contribution to the financing of agriculture sector related investments, and the role of Trans National Corporations (TNA) as major source of FDI for agriculture.

<sup>1</sup> In several figures in this document, causal relationships between variables were represented in two forms:

1- – This relationship should be read: if A increases (decreases), then B increases (decreases) more than it would without the change in A. The variables generally move in the same direction.

2- – This relationship should be read: if J increases (decreases), then K decreases (increases) more than it would without the change in J. The variables generally move in opposite directions. The rounded shape at the beginning of the Inward flow and the end Outward flow means that the model does explain where these flows come from or go to.

4. Chapter III tries to explain and illustrate with Paraguay examples the environmental, economic, and social impacts of FDI in agriculture.
5. To understand the factors that affect FDI decisions in the agriculture sector, Chapter IV describes various indicators used to characterize several aspects of the business climate in Paraguay, and proposes a specific model that combines the principal indicators and variables that can explain the attractiveness of investments in the agriculture sector.
6. Using the model described in Chapter IV, Chapter V tries to identify the principal factors which with potential or improvement so that Paraguay could attract FDI into the agriculture sector.
7. The last Chapter, VI, presents the principal conclusions and recommendations.

## II. FDI in Paraguay

8. Chapter II of the case study describes and quantifies FDI in Paraguay in terms of its importance in relation to other countries and the Paraguayan economy, its contribution to the financing of agriculture sector related investments, and the role of transnational corporations as major source of FDI in agriculture. The principal sources of information for this section are UNCTAD, The World Bank, and the Central Bank of Paraguay.

9. **Box - Overview of Paraguay's Economy** provides a brief overview of the Paraguayan economy. According to the World Bank (2007), Paraguay's economy can be classified as agriculture based<sup>2</sup> while UNCTAD (2009) considers the relative importance of agriculture in the country to be high and manufacturing to be of low relative importance. The dominance of the agriculture sector in the economy can be seen through the facts that the substantial contribution of agriculture value added as a percentage of GDP has varied from 17% to 37%, while for the year 2009, the contribution was around 24% (Figure - Agriculture value added as a percentage of GDP (current USD)). Agriculture is also a major source of employment being responsible in 2007 for 29.5% of the total number of jobs in the economy.

### **Box - Overview of Paraguay's Economy**

Landlocked Paraguay has a market economy distinguished by a large informal sector, featuring reexport of imported consumer goods to neighboring countries, as well as the activities of thousands of microenterprises and urban street vendors. A large percentage of the population, especially in rural areas, derives its living from agricultural activity, often on a subsistence basis. Because of the importance of the informal sector, accurate economic measures are difficult to obtain. On a per capita basis, real income has stagnated at 1980 levels. The economy grew rapidly between 2003 and 2008 as growing world demand for commodities combined with high prices and favorable weather to support Paraguay's commodity-based export expansion. Paraguay is the sixth largest soy producer in the world. Drought hit in 2008, reducing agricultural exports and slowing the economy even before the onset of the global recession. The economy fell 3.5% in 2009, as lower world demand and commodity prices caused exports to contract. The government reacted by introducing fiscal and monetary stimulus packages. Political uncertainty, corruption, limited progress on structural reform, and deficient infrastructure are the main obstacles to growth.

Source: (CIA 2010)

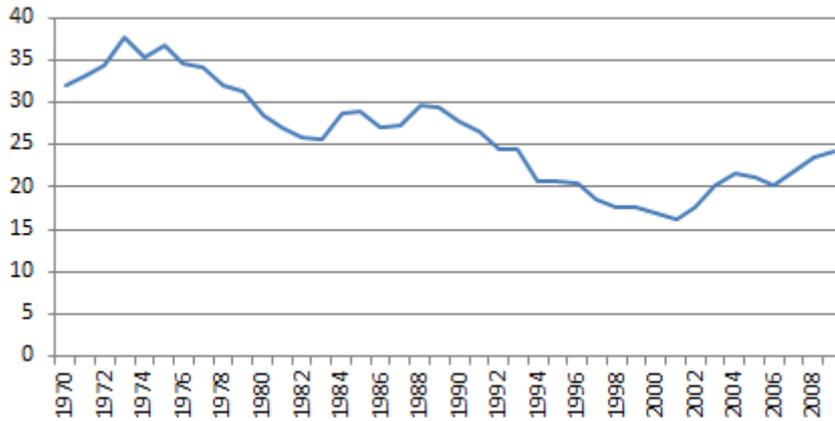
For a historical perspective, including the importance of the Agriculture Sector since colonial times, see (Valdovinos and Naranjo 2004)

10. Agriculture is also important as the principal formal export sector of the economy (Figure - Paraguay top export products). The share of total agriculture exports out of total merchandise exports is 89.3%. In fact, all 13 export products for which Paraguay has a Revealed Comparative Advantage are related to the agriculture sector (Annexes 12 and 13).

11. Paraguay has had a substantial portion of its population in rural areas, although it has been reducing over time. From 1960 to 2010, rural population has varied from 65% to 39.5%, a substantial number (Annex 12). It is also in rural areas that most of the poor are found; 58.7% in 2009 according to the Statistic Agency of Paraguay. Around 50% of the rural population is considered poor (Annex 12).

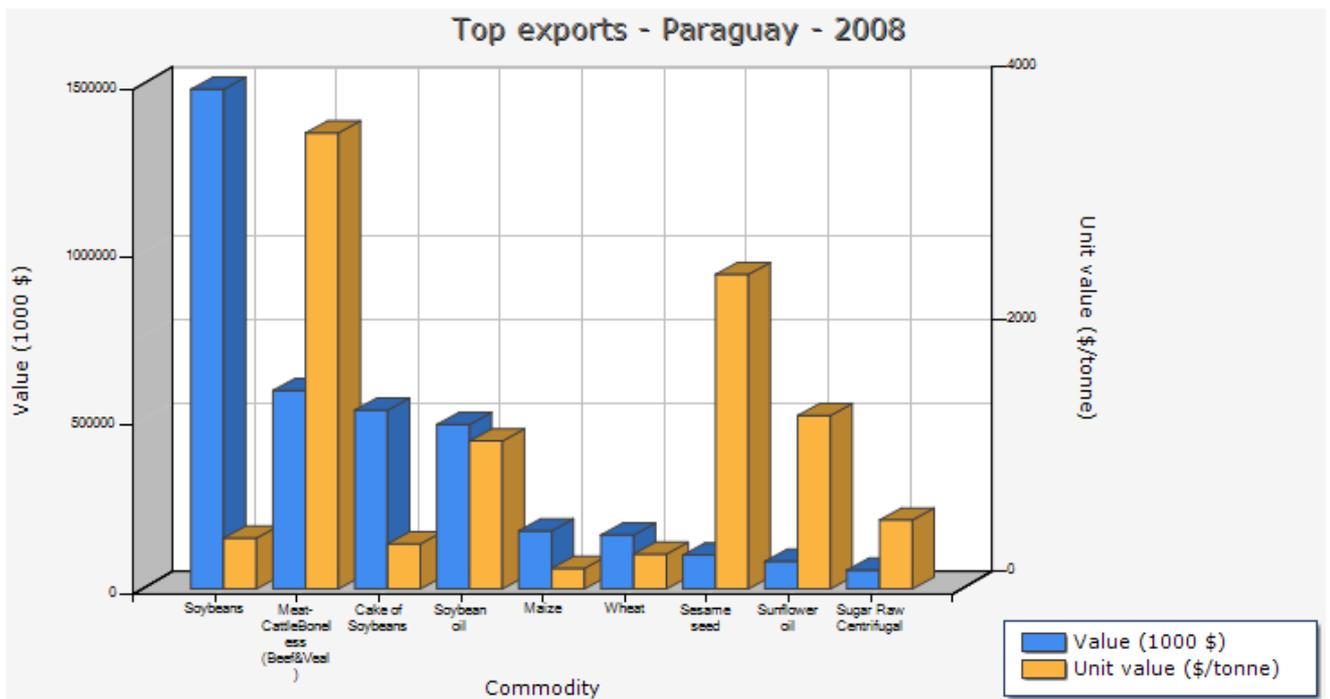
<sup>2</sup> The three types of economies identified by the World Bank (2007) are **Agriculture-based countries**—Agriculture is a major source of growth, accounting for 32 percent of GDP growth on average—mainly because agriculture is a large share of GDP—and most of the poor are in rural areas (70 percent). This group of countries has 417 million rural inhabitants, mainly in Sub-Saharan countries. Eighty-two percent of the rural Sub-Saharan population lives in agriculture-based countries. The other two types of economies are **Transforming countries** and **Urbanized countries**. See definitions in the Glossary on Annex 13..

Figure - Agriculture value added as a percentage of GDP (current USD)



Source: Prepared by the author based on data from World Development Indicators of the World Bank (28/sept/2010).

Figure - Paraguay top export products



Source FAOSTAT. 2010

**A. Comparative importance of FDI for Paraguay**

12. Paraguay has received the second smallest amount of FDI in South America, only surpassing Guyana. Up to 2008, the country had accumulated a stock of over USD 2.308 billion in FDI in all sectors of the economy, which represented only 0.36% of all FDI in South American countries (Table - FDI stock, by regions and economies in Latin America and the Caribbean, 1990, 2000, 2008). The most the

country has received in a single year was around USD350 million in 1998; while there have been several years since 1970 that there has been less than USD30 million in FDI a year for all sectors of the economy. The average annual foreign direct investment for the period 1990 – 2009 is less than USD141 million (Figure - Net FDI Inflow (current USD)).

**Table - FDI stock, by regions and economies in Latin America and the Caribbean, 1990, 2000, 2008**

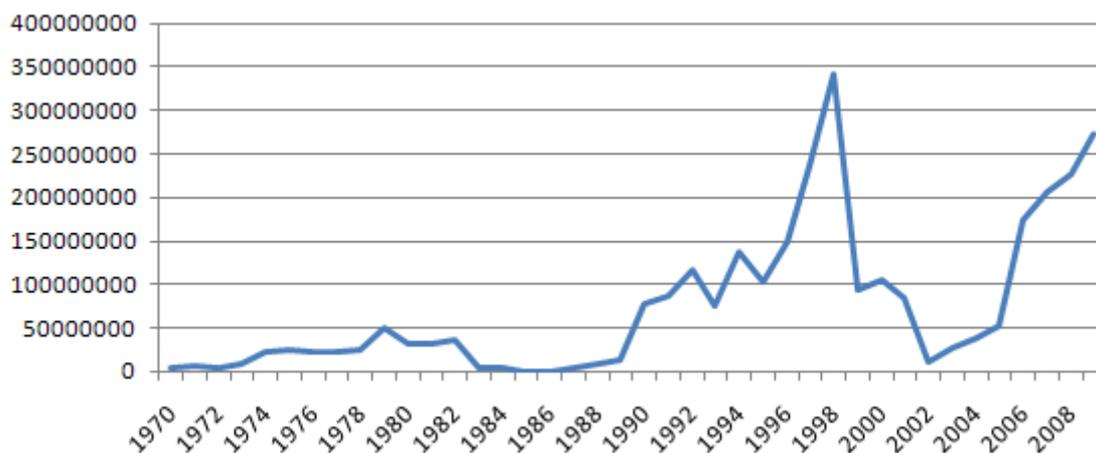
USD millions

Region/economy	FDI inward stock		
	1990	2000	2008
<b>Latin America and the Caribbean</b>	<b>110 547</b>	<b>502 487</b>	<b>1 181 615</b>
<b>South and Central America</b>	101 977	424 180	978 056
<b>South America</b>	73 481	309 057	633 517
Argentina	7 751*	67 601	76 091
Bolivia	1 026	5 188	5 998
Brazil	37 143	122 250	287 697
Chile	16 107*	45 753	100 989
Colombia	3 500	11 157	67 229
Ecuador	1 626	6 337	11 300
Falkland Islands (Malvinas)	-*	58*	--
Guyana	45*	756*	1 422*
Paraguay	418*	1 327	2 398
Peru	1 330	11 062	30 232
Uruguay	671*	2 088	8 788
Venezuela, Bolivarian Republic of	3 865	35 480	41 375

Source: Adapted from (UNCTAD, 2009)

13. As a consequence, FDI represents only a relatively small portion of the country's total Gross Domestic Product. Figure - Net FDI inflow as a percentage of GDP, Paraguay, shows that net FDI inflow varied from 0.017% up to 4.3% of the total GDP from 1970 to 2009. For the period of 1990 to 2009, the average annual percentage that FDI represented out of GDP was 1.6%.

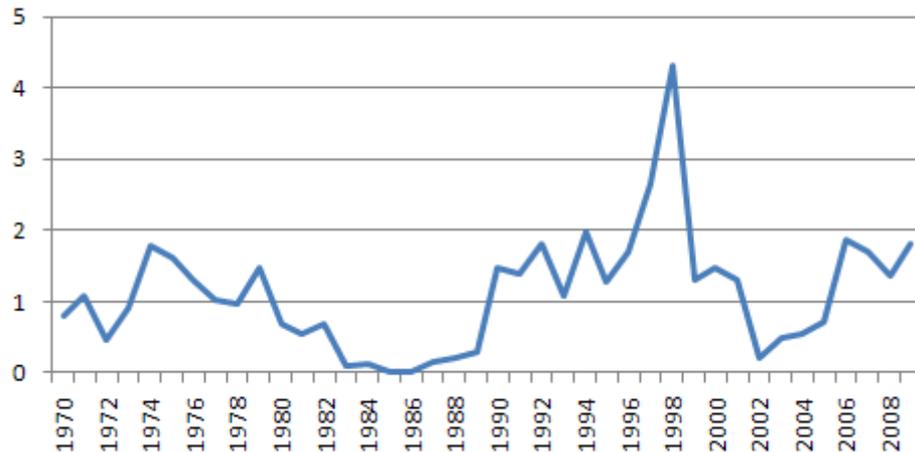
**Figure - Net FDI Inflow (current USD)**



Source: Prepared by the author based on data from World Development Indicators of the World Bank (28/sept/2010).



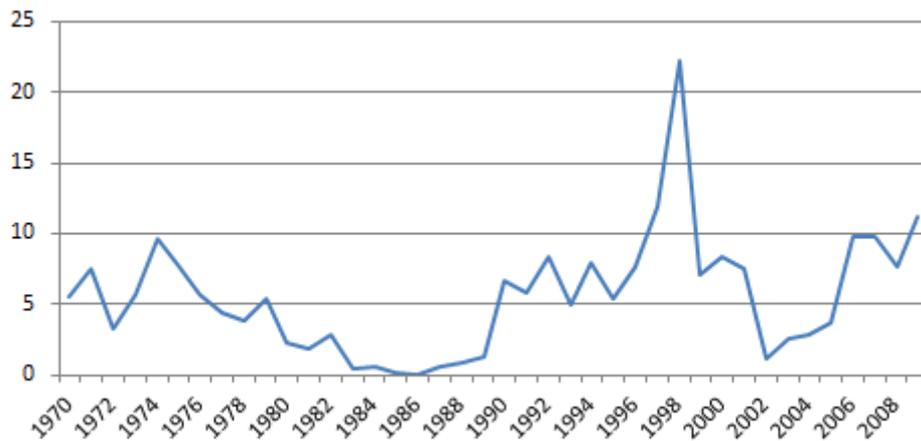
**Figure - Net FDI inflow as a percentage of GDP, Paraguay.**



Source: Prepared by the author based on data from World Development Indicators of the World Bank (28/sept/2010).

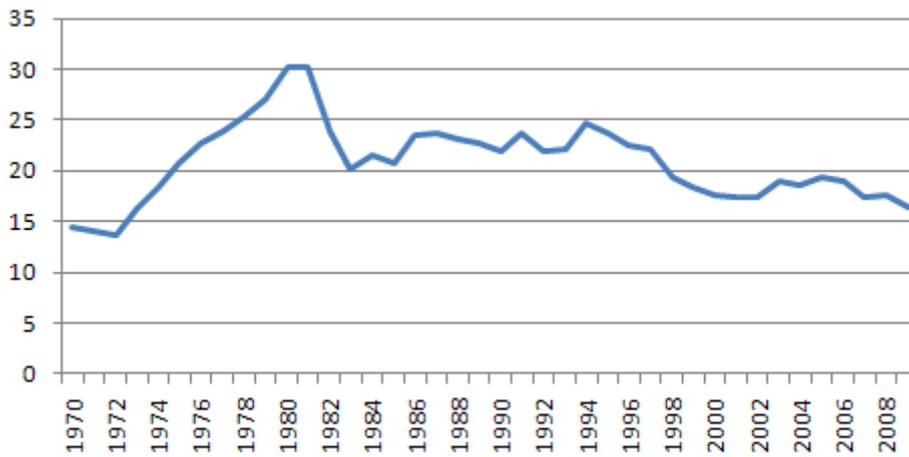
14. FDI inflows, nevertheless, make a significant contribution to capital formation. Figure - FDI as a percentage of Gross Fixed Capital Formation shows that the contribution of total FDI inflow to gross fixed capital formation has varied between nearly zero and an exception year, 1998, with 22% with an average of 8%. Gross fixed capital formation represents from around 13% to 30% of GDP, as shown in Figure - Gross Fixed Capital Formation as a percentage of GDP, Paraguay, 1970-2009.

**Figure - FDI as a percentage of Gross Fixed Capital Formation**



Source: Prepared by the author based on data from World Development Indicators of the World Bank (28/sept/2010).

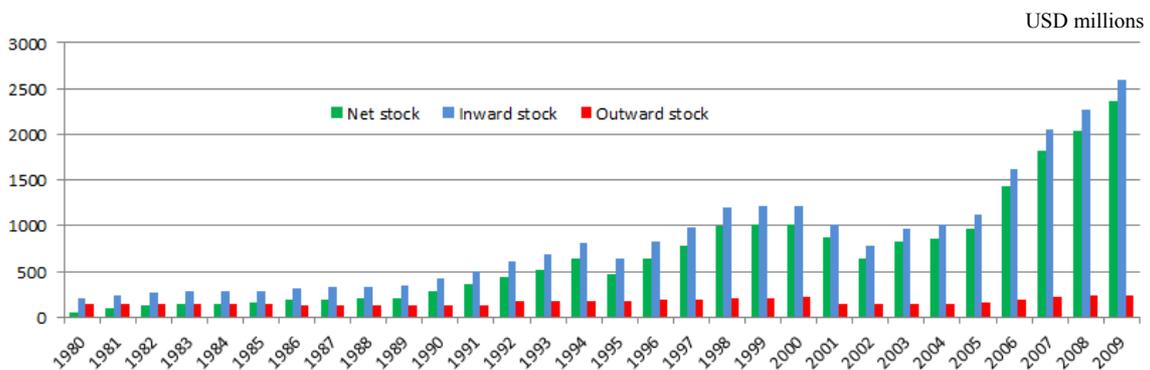
**Figure - Gross Fixed Capital Formation as a percentage of GDP. Paraguay, 1970-2009**



Source: Prepared by the author based on data from World Development Indicators of the World Bank (28/sept/2010).

15. FDI has been relatively modest but positive for Paraguay over the years. Figure - Inward, outward, and net FDI stocks for Paraguay shows that inward FDI stocks have always been greater than outward stocks, resulting in positive net stock (see also Figure - Inward, outward, and net FDI flows for Paraguay).

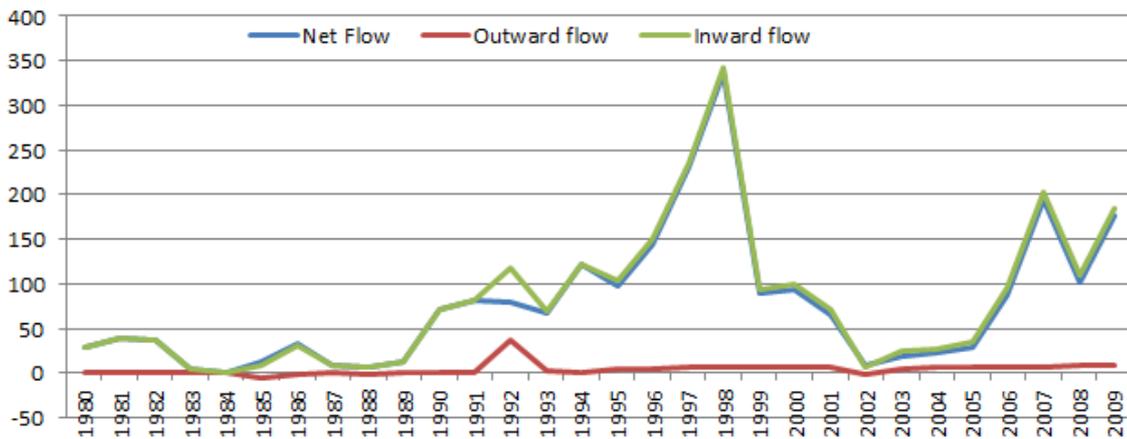
**Figure - Inward, outward, and net FDI stocks for Paraguay**



Source: Prepared by the author based on data from (UNCTAD, 2009)

Figure - Inward, outward, and net FDI flows for Paraguay

Millions of USD at current prices and current exchange rates

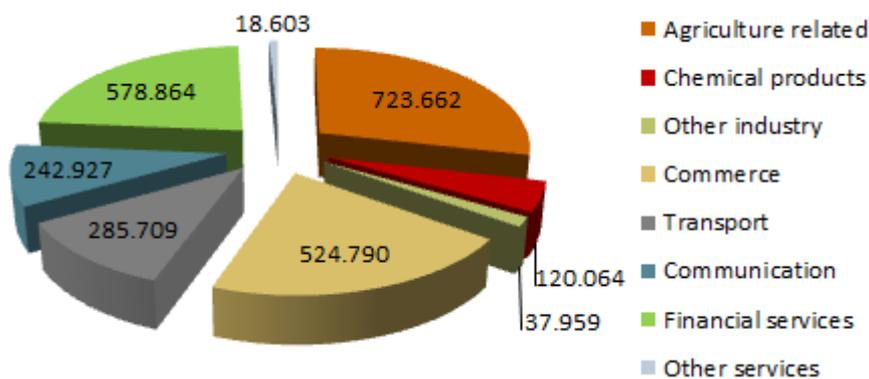


Source: Prepared by the author based on data from (UNCTAD, 2009)

16. Until 2008, Paraguay accumulated a total of only 2.308 billion in inward FDI stock. The distribution of these resources has favored mainly agriculture related sector, followed by the financial services sector, commerce and other services. There has been nearly no investments in non-agriculture related industries, or the mineral extraction sector (Figure - FDI stock until first quarter 2010, Paraguay). Agriculture related sector inward FDI stock until 2010 totaled nearly USD724 million.

Figure - FDI stock until first quarter 2010, Paraguay

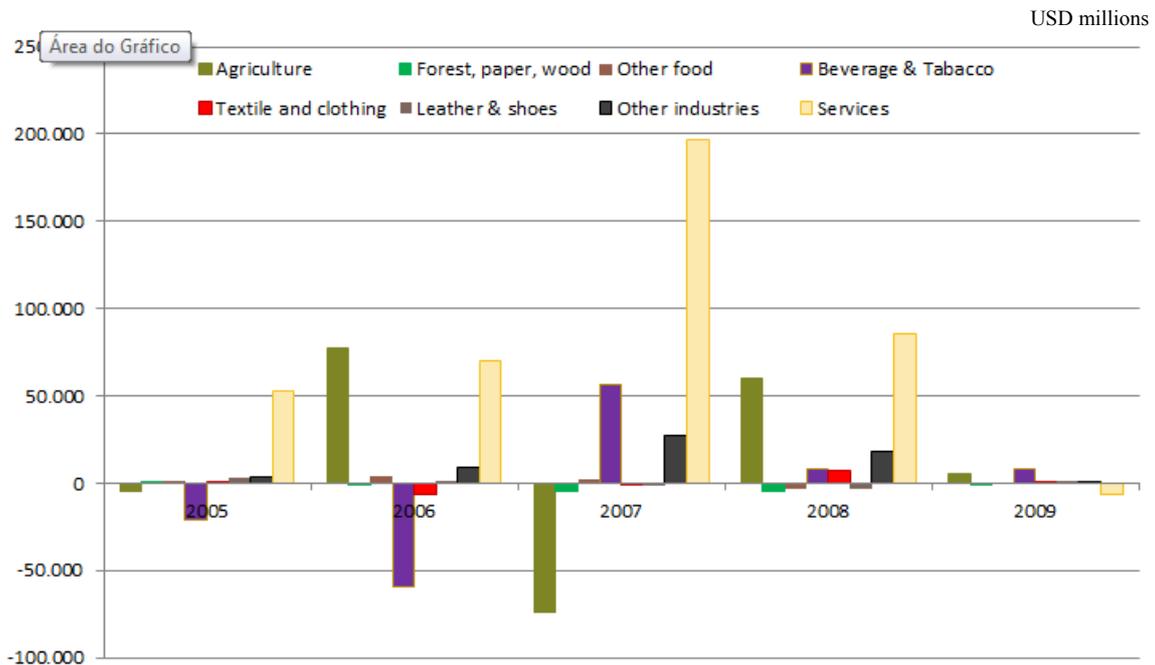
USD millions



Source: Prepared by the author based on data from (Central Bank of Paraguay, 2010)

17. An analysis of the yearly inward flows of FDI in the country since 2005, show that the agriculture related sector has received varied amounts of investments but also has seen substantial outflow investment (Figure - FDI flows by principal economic activities, 2005-2009, Paraguay). FDI inflows in forest based businesses are nearly inexistent. With the economic crisis of 2009, FDI inflows essentially halted in all sectors.

Figure - FDI flows by principal economic activities, 2005-2009, Paraguay



Source: Prepared by the author based on data from Central Bank of Paraguay, 2010.

18. In sum, FDI inward flows and stocks into Paraguay are very modest. The country is one of the smallest recipients of these investments in South America. However, given the importance of the agriculture related sector for the economy which receives most of these modest FDI inward resources, they are relatively important not only in terms of the country's capital formation but also in relation to the Paraguay's total GDP.

### B. FDI in Agriculture Sector

19. Paraguay is a modest recipient of FDI flows in the agriculture sector, however important they are for the sector. According to Paraguayan Central Bank, up to the first quarter of 2010, Paraguay received a net USD724 million. Indeed in 2007 and 2005, the agriculture sector actually had negative flows of FDI.

20

#### Box - Paraguay's Three Sector Agriculture

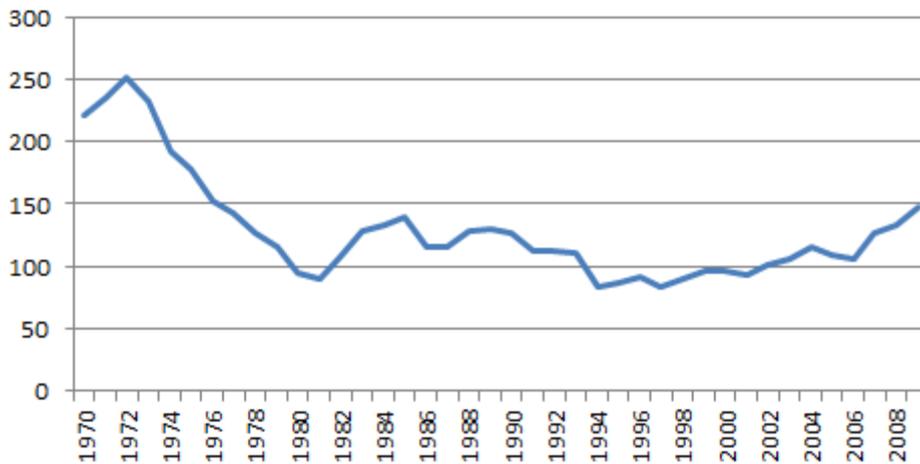
... Agriculture in Paraguay is a story of three sectors – a highly productive, mechanized agricultural sector focused on exports (concentrated on soybeans and beef which together represent about 90 percent of registered exports) which exists alongside large extensions still under-utilized and a large number of poorly educated smallholders with little access to effective agricultural extension services, land and capital. Within small landholders, some are so poor and deprived of land, human capital and basic services that they are unlikely to survive without significant social assistance. Others, however, have had better access to basic services—particularly education—and are slowly forming a small but successful middle class in rural areas, devoting time to both agricultural and service activities. Among small landholders, the youth has for the most part migrated to Asuncion or to Argentina, Spain or the United States.

Source: (World Bank 2009)

Even though agriculture activities are not uniform throughout the country (Box - Paraguay's Three Sector Agriculture), it is an important sector for the Paraguayan economy. It represents a major portion of the capital

formed every year, although this portion has tended to decrease over the years. Figure - Agriculture Value Added as a percentage of Gross Fixed Capital Formation. Paraguay 1970-2009 shows that Agriculture Value Added is in a general decreasing mode varying from around up to 250% in early 1970s to around 75% in late 1990s. This substantial proportion makes agriculture the principal part of the country's economy.

**Figure - Agriculture Value Added as a percentage of Gross Fixed Capital Formation. Paraguay 1970-2009**



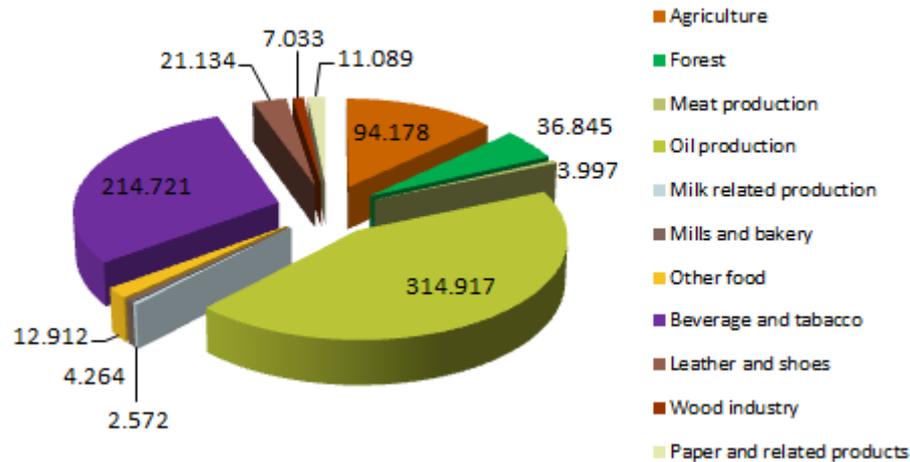
Source: Prepared by the author based on data from World Development Indicators of the World Bank (28/sept/2010).

21. FDI inflows into agriculture sector, however, are important but a marginal portion of the economy's Agriculture Value Added (Figure - FDI flows by principal economic activities, 2005-2009, Paraguay). This implies that most of the investment in the sector has been done with domestic funding.

22. Among the agriculture related industries receiving FDI, oil production was the one that got the most of the inward FDI, for a total of USD315 million up to the first quarter of 2010. In second place, beverage and tobacco received USD214.7 million of inward FDI stock (Figure – Inward FDI stocks in agriculture related industries until first quarter 2010. Paraguay). Agriculture per se has accumulated a FDI stock of only USD94.2 million up to the same date.

**Figure – Inward FDI stocks in agriculture related industries until first quarter 2010. Paraguay**

USD Millions



Source: Prepared by the author based on data from Central Bank of Paraguay, 2010.

23. In sum, FDI inflows into agriculture sector is a very small portion of the economy's Agriculture Value Added. Among the agriculture related industries, oil production was the one that received over the years the most of the inward FDI.

### **C. TNC Investment in Paraguayan Agriculture**

24. As expected due to the small size of FDI inflows, Trans National Corporations have had a small presence in Paraguay and because of that their importance for the country's economy and the agriculture sector is limited. This lack of importance of TNC presence in the country can be illustrated in Table - The world's 25 largest TNC suppliers of agriculture, ranked by foreign assets, 2007 which lists the world's 25 largest TNC suppliers of agriculture. Out of these 25, only Bayer AG has made investments in production in Paraguay. The following TNCs have distributors, sales representatives, or dealers: Syngenta AG; El Du Pont de Nemours; Monsanto; Agco; Claas KGaA; Genus PLC; Sakata Seed Corp.; Kverneland ASA. No evidence was found that the reminder of the TNCs in table 3 is present in Paraguay.
25. A noteworthy example of TNC investing in agriculture related businesses is Archer-Daniels-Midland Company (Box - ADM in Paraguay.) which procures, transports, stores, processes, and merchandises agricultural products.
26. The small presence of agriculture related TNCs in the country has limited their economic, social and environmental impacts.

**Table - The world's 25 largest TNC suppliers of agriculture, ranked by foreign assets, 2007**

(USD millions and number of employees)

Rank	Corporation	Home economy	Assets		Sales		Employment
			Foreign	Total	Foreign	Total	Total
1	BASF AG <sup>a</sup>	Germany	44 633	68 897	49 520	85 310	95 175
2	Bayer AG <sup>a</sup>	Germany	24 573	75 634	24 746	47 674	106 200
3	Dow Chemical Company <sup>a</sup>	United States	23 071	48 801	35 242	53 513	45 900
4	Deere & Company	United States	13 160	37 176	7 894	23 999	52 000
5	El Du Pont De Nemours	United States	9 938	34 131	18 101	29 378	60 000
6	Syngenta AG	Switzerland	9 065	12 585	9 281	9 794	21 200
7	Yara International ASA	Norway	8 009	8 541	9 939	10 430	8 173
8	Potash Corp. of Saskatchewan	Canada	6 079	9 766	3 698	5 632	5 003
9	Kubota Corp.	Japan	5 575	12 691	4 146	9 549	23 727
10	Monsanto Company	United States	4 040	12 253	3 718	8 563	18 800
11	Agco Corporation	United States	4 034	4 699	5 654	6 828	13 720
12	The Mosaic Company	United States	3 881	9 164	3 859	5 774	7 100
13	ICL-Israel Chemicals Ltd	Israel	2 066	4 617	2 092	4 351	..
14	Provimi SA	France	1 962	2 237	2 523	2 805	8 608
15	Bucher Industries AG	Switzerland	1 648	1 850	2 058	2 172	7 261
16	Nufarm Limited	Australia	1 191	2 010	925	1 512	..
17	CLAAS KGaA	Germany	1 000	2 619	2 884	3 781	8 425
18	Sapec SA	Belgium	826	826	837	837	692
19	Terra Industries Inc	United States	735	1 888	389	2 360	871
20	Aktieselskabet Schouw & Company A/S	Denmark	695	2 016	1 350	1 598	3 541
21	Genus PLC	United Kingdom	652	851	394	469	2 124
22	Scotts Miracle-Gro Company	United States	591	2 277	470	2 872	6 120
23	Kvermeland ASA	Norway	367	487	649	741	2 717
24	Sakata Seed Corp.	Japan	331	843	140	383	1 711
25	Auriga Industries A/S	Denmark	319	849	624	856	1 615

Source: UNCTAD, 2009

<sup>a</sup> General chemical/pharmaceutical companies with significant activities in agricultural supplies, especially crop protection, seeds, plant science, animal health and pest management.

**Note: Data are missing for various companies. In some companies, foreign or domestic investors or holding companies may hold a minority share of more than 10%. In cases where companies are present in more than one agri-food industry, they have been classified according to their main core business.**

### Box - ADM in Paraguay.

ADM began operations in Paraguay in 1997 by purchasing the local grain divisions of Glencore LTD and Silo Amambay. Today, it has more than 600 employees in Paraguay. From its headquarters in Minga Guasu, it processes about 30 percent of Paraguay's output of grain and oilseeds.

Soybean production in Paraguay has been growing, and in 2010, ADM began constructing a soybean crushing plant that will produce protein meal for animal feed, as well as vegetable oil. The new plant, with an anticipated daily crush capacity of 3,300 metric tons, will increase local crop-origination and export capacity. It will be located adjacent to an ADM fertilizer-blending plant in Villeta, near the capital city of Asunción, and is expected to be completed in 2012.

ADM also operates 26 elevators in Paraguay, most of which are in the fertile agricultural zone bordering the Parana River. In recent years, we have added two elevators and expanded the storage and processing capacity of existing silos.

Since its founding in Paraguay, ADM has built its transportation operations by purchasing a trucking company, two river transportation companies – Naviera Chaco and America Fluvial – and by executing contracts to build more than 60 barges. From its headquarters in Asunción, its river transportation group now operates 10 tugboats and 171 barges. ADM owns one port facility and lease three more.

ADM values community involvement. Through company contributions and employee volunteer efforts, it supports police and fire departments, sports clubs, forestry projects, literacy programs and educational efforts focused on agronomy, grain trading, basic mechanics and electrical skills.

#### About ADM

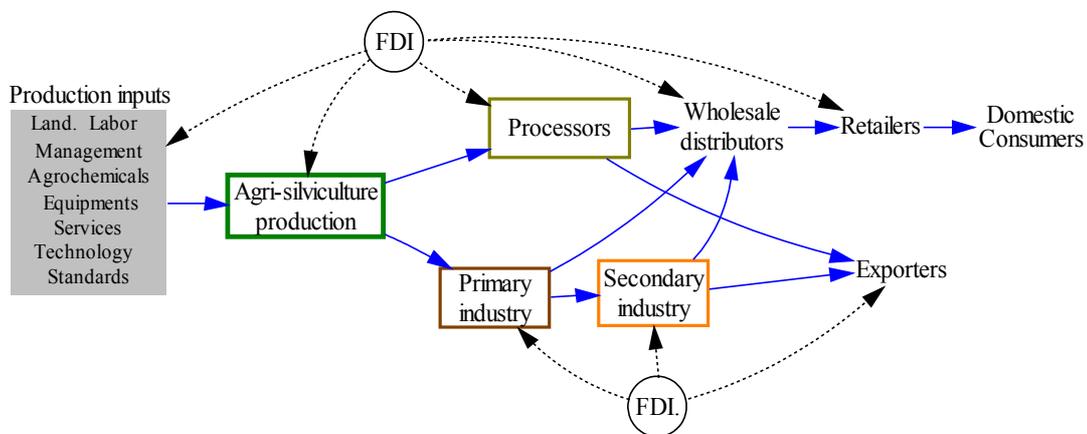
Archer-Daniels-Midland Company procures, transports, stores, processes, and merchandises agricultural commodities and products in the United States and internationally. Every day, the 29,000 people of ADM turn crops into renewable products that meet the demands of a growing world. At more than 240 processing plants, we convert corn, oilseeds, wheat and cocoa into products for food, animal feed, chemical and energy uses. It operates the world's premier crop origination and transportation network, connecting crops and markets in more than 60 countries. ADM's global headquarters is in Decatur, Illinois, and our net sales for the fiscal year ended June 30, 2010, were \$62 billion.

Source: Adapted from <http://www.adm.com/en-US/worldwide/paraguay/Pages/default.aspx> accessed in august 20, 2010.

### III. Impacts of FDI in the agriculture sector of Paraguay

27. The impacts of inward FDI flows in a host country can be grouped in three basic classes: economic, environmental, and social impacts. These impacts may be derived from nearly any step of the value chain associated with the investments involved, from the provision of production inputs through retail distribution or export. Figure - Simplified agri - silviculture value chain and FDI. presents a simplified representation of the value chain. It should be stressed that obviously, the types of production inputs listed in the figure are also needed at the industrial, processing and distribution and export phases. Also, financial resources, like FDI, are listed as one input type for simplification's sake, but naturally it can be used to acquire other inputs.

Figure - Simplified agri - silviculture value chain and FDI.



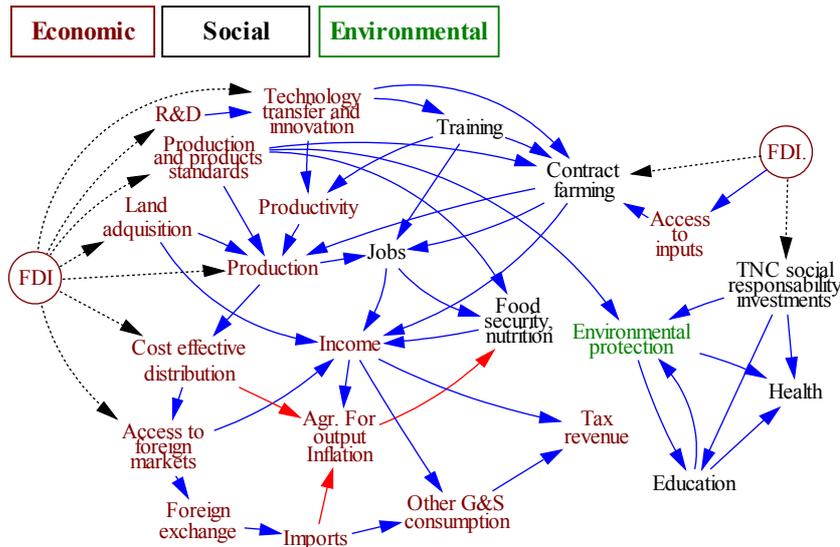
28. Nearly all stages of the value chain are subject to FDI, and nearly all of them will have one or more type of impact on the host country. Given the complexity of this analysis, the unavailability of secondary information about all of them, and the fact that this study is not expected to collect primary information, the present chapter will approach these issues with illustrations found in secondary sources.
29. The following sections will describe briefly the nature of the impacts of FDI in economic, the environmental, and social terms. These typical impacts have not been extensively present in Paraguay due to the modest inflow and stock of FDI in the agriculture related sector of the country. Nevertheless, it is useful to mention the nature of the impact if nothing else, to illustrate the types of impacts Paraguay is not having as much as it could if the country were more attractive to foreign investors.

#### A. Economic Impacts

30. The impacts of inward FDI flows in the economy of the host country are diverse, as shown in Figure - Economic, Social, and Environmental Impacts of FDI.. In this section, the principal economic impacts will be discussed. FDI to agriculture supplements domestic capital for investment. It also embodies advanced technologies in the form of superior inputs, and equipment; introduces new products, production packages, advanced management, engages in the

development of the food processing industry, participates in competitive food distribution and export through their access channels, accelerates reform in rural areas and in agriculture in general, creates jobs, improve income, and combats poverty (UNCTAD 2009). In the case of Paraguay, this can be perceived in the increased supply of inputs and agro processing industries that utilize the state of the art technology of processing, packaging and marketing the agricultural products for the domestic and international markets.

Figure - Economic, Social, and Environmental Impacts of FDI.



31. FDI affects agriculture and forest productivity through two basic means. With the financial resources brought, investors also often bring managerial skills, operational standards, and production technologies either readily applicable or they adapt them to local conditions and then use them. If needed, as frequently is with biologically based production systems, investors may need to undertake local research and/or collaborate with local capacities to generate, and transfer the technology and innovation needed and train stakeholders. These partnerships are scarce in Paraguay, except for the noteworthy contributions mentioned in Box - ADM in Paraguay, which illustrates a partnership between ADM and training institutions.
32. Paraguay seems to have benefited little from the participation of TNCs in the process of productivity improvement. In fact, it has to be noticed that this is likely related to the domestic innovation capabilities of the country. UNCTAD adverts for some of the potential costs that TNCs involvement in a country's innovation system may bring.

*..., agricultural R&D undertaken by TNCs locally may trigger concerns in host developing countries. The potential costs of TNC involvement in the agricultural innovation system for a host developing country depend mainly on the type of R&D and TNCs' motives, as well as on the strength of the domestic innovation system. Major issues of concern relate to the potential downsizing of domestic R&D, the narrow scope of R&D activities (focusing too much on short-term commercial interests), unfair sharing of intellectual properties*

*resulting from local R&D and related revenues, and possible technology leakage. A related concern is that the knowledge created by TNCs in cooperation with local institutions may be used by the TNCs in other markets, thereby enabling them to cream off the returns. Another concern is that foreign research affiliates might become “gene pirates” if they transfer domestic-specific germplasm resources abroad and utilize them commercially for international markets. (UNCTAD, 2009)*

33. In addition to more productive technologies, TNCs have also brought to Paraguay modern inputs such as genetically improved seeds, machines, and agrochemicals which have substantially helped in the increase of productivity and production.
34. With the increased economic activity generated by FDI, tax collection increases as well providing resources that governments can use to provide socially desired expenditures. For the sake of simplicity, Figure - Economic, Social, and Environmental Impacts of FDI. represents the increase in tax revenue from only two sources, namely, income tax and consumption tax. Other taxes on land transaction; labor; input sales, etc. are not taken into account. Even though these taxes represent costs for investors, they are an economic benefit for the country, regardless of how efficiently these resources are applied.
35. Another economic impact of TNCs in Paraguay has been the application of production and products standards. These standards assure the quality of the products that they offer in domestic and international markets, thereby helping them to preserve their mark’s credibility, assure the safety of their products, and demonstrate their commitment with the environmental, and compliance of labor and other socially desirable practices during the production processes (Box - ADM in Paraguay. and Box - Production and products standard adoption). Contract farming or forestry involves and other procurement activities are the principal instruments used by TNCs to assure the compliance with such standards. By doing so, Paraguay has likely benefited by having access to fiber and safer food, produced with production processes comparable with those of developed countries.

**Box - Production and products standard adoption**

36

For major agribusiness TNCs, ensuring the quality and safety of the foods they produce is an important part of their business strategies, especially since the reputation of their brand is an integral element of their competitiveness. They therefore require their suppliers to comply with stringent quality and safety standards, which are often more demanding than internationally recognized food safety standard developed by FAO and the World Health Organization (WHO).

Standards allow firms to specify, harmonize and manage the product quality and delivery conditions that they require from suppliers, contract farmers included. Standards are also used to set criteria for rewarding suppliers who invest in quality and safety management systems. Traditionally, agribusiness firms used standards for coordinating supply chains, which might be spread over many regions or even countries. More recently, however, these firms also use standards as a marketing tool for differentiating goods in response to consumer demand for quality. As a result, in some cases, standards extend to labor and environmental aspects of farming as well.

The main tools transnational supermarkets deploy in managing their supply chains are product standards. Since public standards for food quality and safety are relatively low, or not enforced in practice, in many developing countries there has been a proliferation of private standards by agribusiness TNCs and, subsequently, systems of third-party certification.

Indeed, in most cases, the standards that agribusiness TNCs apply in developing countries today are no less stringent than those in use in developed-country markets as a result of the centralization of distribution systems and exports of farm produce.

Source: (UNCTAD 2009).

Contract farming is one of the most effective ways to vertically integrate local landowners with TNC production. Besides the requirement of production and product standards mentioned above, this integration often involves the use of

highly productive inputs, access to technical assistance in the use of technology, assurance of compensatory prices and market for the production, and competitive financing (Box - Significance of contract farming in developing countries). This strategy has been important for food production for decades generating jobs, better income and reducing poverty in rural areas. It is not clear to what extent TNCs have used this strategy in Paraguay.

**Box - Significance of contract farming in developing countries**

**B.** Contract farming is a significant component of TNCs' participation in agricultural production, in terms of its geographical distribution, intensity of activity at the country level, coverage by commodities and types of TNCs involved. In this context contract farming can be defined as non-equity contractual arrangements entered into by farmers with TNC affiliates (or agents on behalf of TNCs) whereby the former agree to deliver to the latter a quantity of farm outputs at an agreed price, quality standard, delivery date and other specifications. It is an attractive option for TNCs, because it allows better control over product specifications and supply than spot markets. At the same time it is less capital intensive, less risky and more flexible than land lease or ownership. From the perspectives of farmers, contract farming can provide predictable incomes, access to markets, and TNC support in areas such as credit and know-how.

TNCs engaged in contract farming activities and other non-equity forms are spread worldwide in over 110 countries across Africa, Asia and Latin America. For example, in 2008 the food processor Nestlé (Switzerland) had contracts with more than 600,000 farms in over 80 developing and transition economies as direct suppliers of various agricultural commodities. Similarly, Olam (Singapore) has a globally spread contract farming network with approximately 200,000 suppliers in 60 countries (most of them developing countries).

Contract farming is not only widespread, but also intensive in many emerging and poorer countries. For instance, in Brazil, 75% of poultry production and 35% of soya bean production are sourced through contract farming, including by TNCs. (UNCTAD, 2009)

***Environmental Impacts***

37. Decisions on agriculture or forest uses on the same land often generate conflicts not only for landowners and investors themselves but also for neighbors, society in general, and even for the international community. At a highly competitive commercial level, agriculture and forest uses of a given piece of land are frequently mutually exclusive alternatives. In many cases, lands covered with native forests are converted into agriculture land uses, resulting in deforestation. Misused land often generates erosion, and runoff which deteriorate the quality of the environment, reduce natural fertility of the soils, and pollute waters.
38. The impacts of inward FDI flows in agriculture on the environment are varied and depend on several factors. As any economic activity with a physical presence, they can be direct or indirect, positive or negative. Direct impact are those on the site where the production is taking place like soil erosion, runoff, loss of biodiversity due to land use change, pollution generated through misuse of agrochemicals, etc. These direct impacts are associated with the production technology used, the vulnerability of the site where production takes place, and the scale of the endeavor. Direct impacts are usually handled by the adoption of measures to prevent, mitigate, correct, or compensate for the impact. In Paraguay, there are few standards for agricultural activities, which must be complied with by TNCs operating in the country. However, these impacts are an integral part of the requirements for certification that TNCs often seek. The adoption of the appropriate and sustainable production system is usually very effective and often adopted by TNCs, which make this type of impact usually be less critical than those generated by local investors.
39. Indirect adverse impacts of agriculture are a little more complex to understand and address. They are a consequence of the economic influence of a given enterprise in the third parties landscape where it is being undertaken. They

usually affect land use and cannot be addressed directly by those that generate them because of lack of capacity and authority to act. These impacts to be properly addressed usually require the intervention of the State.

40. TNCs usually are law obedient and indeed go beyond their legal obligations and apply additional good practices established in their home countries or at international level. They also have philanthropic or corporate responsibility activities that help to address indirect environmental impacts, like undertaking directly or financing NGOs which provide environmental education services and training.
41. Market incentives, legal requirements, home country and host social pressure, and standard practices lead TNCs to adopt production and corporate responsibility measures to address potential negative environmental impacts and promote positive impacts. TNCs not always are accomplishing this goal, but they are an easy target for stakeholders and governments so they usually perform much as well if not better than the average local firm.

### ***C. Social Impacts***

42. The social impacts of inward FDI flows are also varied. The principal and direct ones is the increased income generated by TNCs activities in the various stages of the chain of value. The jobs they create, the better wages they pay, and the lower prices for food and fiber their increased supply often generate increase the quality and availability of food increase security and nutrition, as well as promote prosperity. By being active actors in rural zones, they often contribute to reduce poverty.
43. TNCs also comply with laws related to social impact of their activities such as labor laws to avoid slavery like work conditions or under aged workers.
44. TNCs frequently have foundations or other institutional arrangements to facilitate their investments in corporate responsibility and gain the goodwill of neighbors and authorities. They often finance health, education, cultural, training projects for workers' children, neighbors, and other community stakeholders.

#### **IV. Factors affecting the Business Climate for FDI in Agriculture Sector**

45. The success of business initiatives depends on several factors, many of which are internal to the firms. Those conditions are usually under the control of managers and success or failure of their operations depends on their capabilities and decisions. Although such internal performance is indispensable, it is by no means sufficient for the success of firms.
46. Entrepreneurs also operate within an external system that offers varying degrees of conditions that favor and facilitate their activities, or complicate and make them more costly. Individual firms cannot usually control those external factors such as the rules of the game (laws, regulations, tax burden, and their enforcement), input and output markets, or others that directly affect their costs, revenues, and profitability. Firms' success, therefore, will increase with the improvement of business climate that a given country can offer to investors.
47. Successful agriculture and forest businesses depend on natural resources, productive human resources, competitively priced capital and inputs, and other favorable climate conditions for investments. Without such conditions, investments become too costly and risky while benefits too small and uncertain so that profits are not sufficient to motivate entrepreneurs and investors to act.
48. Even if a country counts with abundant natural resources such as soil, topography, and climate, which are the only resources that cannot easily be created or hired anywhere, it may not offer other needed conditions to investors. Agriculture and forest based businesses, therefore, cannot prosper and cannot generate the benefits to society that they otherwise could under better conditions.
49. This chapter of the study will first discuss the performance of Paraguay in various indexes measured by different organizations that seek to compare the conditions that entrepreneurs face in different countries to invest successfully. These indexes show the challenges businesses in Paraguay have to face to succeed and prosper.
50. The second part of the chapter discusses a model that tries to identify the factors and relationships that affect the success of businesses in agriculture, forestry, and rural sector, which are critical for development in rural areas. To take advantage of the natural resources that Paraguay has and allow them to become a source of prosperity, the country needs to understand such factors. That understanding would also allow the identification of the critical intervention leverage points to improve the conditions that facilitate the profitable and sustainable operation of private businesses. The model presents a framework that helps in the development of strategies and the identification of measures to improve such conditions.

##### ***A. Paraguay's Conditions for Successful FDI***

51. The success of business initiatives depends on several factors, many of which are internal to the firms while others are external. Those internal conditions are usually under the control of managers and success or failure of their operations depends on their capabilities and decisions. Although such capability is necessary, it is by no means sufficient for the successful operations of a firm. Managers also have to operate within an external environment which may favor or hinder their chances of success. Individual firms cannot

usually control the rules of the game (laws, regulations, and their enforcement), input and output markets, nor other external conditions that affect their costs, revenues, and profitability.

52. Table - Paraguay's performance in selected indexes summarizes the performance of Paraguay in selected indexes created to compare several countries in terms of indicators that affect businesses (Annexes 4, 5, and 6). These indexes show not only the scores that try to quantify the performance of a country. It also ranks these scores to show the relative performance of a country in relation to its peers. In a world where countries have to increasingly compete with each other, the ranking of countries and how these relative performances vary in time, become critical for investors' decision making. Countries have not only to perform well in a given year, they also need to improve over time the conditions they offer more than other countries with which they compete for investments improve. This healthy competition leads to a positive feedback cycle that should benefit investors and society as a whole.

**Table - Paraguay's performance in selected indexes**

Index Name	Paraguay's score and rank.	Brief description
<b>Ease of Doing Business Ranking</b>	Rank: 106 out of 183.	The <i>Ease of Doing Business Ranking</i> is reported yearly by The World Bank, a financial institution to developing countries. The Doing Business Ranking provides measures of business regulations and their enforcement across countries by measuring specific regulatory obstacles to doing business, such as protection of investors, protection of property rights, employment issues, and contract enforcement capabilities. The highest ranked country has the most favorable environment for conducting business in the world. <i>Data collected in 2010</i> . Source: The World Bank. <a href="http://www.doingbusiness.org/data/exploreeconomies/paraguay">http://www.doingbusiness.org/data/exploreeconomies/paraguay</a>
<b>Global Competitiveness Report</b>	Score: 3.35 out of 7 Rank: 124 out of 133	The <i>Global Competitiveness Report</i> is compiled yearly by the World Economic Forum, an independent international organization based in Geneva, Switzerland. The rankings provide a description of the economic competitiveness based on twelve pillars of competitiveness for countries at all stages of development. Some of the factors included come from publicly available data, but the majority comes from a survey the World Economic Forum sends to over 11,000 business executives worldwide. The highest ranked countries are the most competitive. <i>Data collected in 2009</i> . Source: <a href="http://www.weforum.org/pdf/GCR09/GCR20092010fullreport.pdf">http://www.weforum.org/pdf/GCR09/GCR20092010fullreport.pdf</a>
<b>Human Development Index</b>	Score: 0.640 out of 1 Rank: 96 out of 182.	The Human Development Index (HDI) which looks beyond GDP to a broader definition of well-being. The HDI provides a composite measure of three dimensions of human development: living a long and healthy life (measured by life expectancy), being educated (measured by adult literacy and enrolment at the primary, secondary and tertiary level) and having a decent standard of living (measured by purchasing power parity, PPP, income). The index is not in any sense a comprehensive measure of human development. It does not, for example, include important indicators such as gender or income inequality and more difficult to measure indicators like respect for human rights and political freedoms. What it does provide is a broadened prism for viewing human progress and the complex relationship between income and well-being.  Data: 2010. Source: UNDP. <a href="http://hdrstats.undp.org/en/countries/profiles/PRY.html">http://hdrstats.undp.org/en/countries/profiles/PRY.html</a>
<b>Index of Economic Freedom</b>	Score: 61.3 out of 100. Rank: 81 out of 179.	<i>The Index of Economic Freedom</i> is reported annually by the Heritage Foundation, a research and educational institute. The Index of Economic Freedom analyzes a wide range of issues including trade barriers, corruption, government expenditures, property rights, and tax rates to generate an overall ranking of economic freedom. The highest ranked country is the country with the least number of restrictions and constraints on businesses. <i>Data collected in 2010</i> . Source: <a href="http://www.heritage.org/Index/Ranking.aspx">http://www.heritage.org/Index/Ranking.aspx</a>
<b>Economic Freedom of the World</b>	Score: 6.3 out of 10.0 Rank: 81 out of 141	The index published in <i>Economic Freedom of the World</i> measures the degree to which the policies and institutions of countries are supportive of economic freedom. The cornerstones of economic freedom are personal choice, voluntary exchange, freedom to compete, and security of privately owned property. Forty-two variables are used to construct a summary index and to measure the degree of economic freedom in five broad areas: (1) size of government; (2) legal structure and security of property rights; (3) access to sound money; (4) freedom to trade internationally; and (5) regulation of credit, labor and business. <i>Data collected in 2007</i> . See also Annex 5.  Source: Fraser Institute. <a href="http://www.fraserinstitute.org/research-news/research/display.aspx?id=13006">http://www.fraserinstitute.org/research-news/research/display.aspx?id=13006</a>
<b>Corruptions Perception Index (CPI)</b>	Score: 2.2 out of 10. Rank: 146 out of 178 countries studied.	The <i>Corruptions Perception Index</i> (CPI) is reported annually by Transparency International, an international civil society organization. The CPI ranks countries in terms of the degree to which corruption exists in the misuse of public power for private benefit among public officials and politicians. CPI is a composite index determined by expert assessments and opinion surveys. The highest ranked country is the country with the least amount of perceived corruption. Index units, 10=least corrupt, 0=most corrupt. <i>Data collected in 2010</i> . Source: <a href="http://www.transparency.org/policy_research/surveys_indices/cpi/2010/results">http://www.transparency.org/policy_research/surveys_indices/cpi/2010/results</a>

53. The indexes shown in Table - Paraguay's performance in selected indexes illustrate the difficulties investors in most sectors face in Paraguay. Even though some of these indexes may have an overlap among some variables or factors considered, they do provide an useful indication of the absolute and relative performance of countries. In many of them, Paraguay reaches relatively low performance and ranks, being found among the countries that face substantial challenges in the specific conditions measured. Under such difficult contingencies, businesses are unlikely to prosper as much as they otherwise could. This performance also demonstrates that the private sector faces challenges to increase its contribution to the development of the country.
54. It is beyond the purpose and scope of this study to further analyze the results of such indexes. It suffices here, that they clearly show the challenges faced by investors to profitably operate in Paraguay and the need for the adoption of strategic measures to improve the business climate of the country. It is noteworthy that corruption and property rights uncertainties are critical factors frequently mentioned in these indexes as critical conditions that deteriorate overall business climate in Paraguay ( Box - Property rights and Corruption, critical factors deteriorating business climate in Paraguay ).
55. For the Government of Paraguay (GoP), the country offers several good reasons for investors as summarized in Box - 10 Reasons to Invest in Paraguay. Although these reasons are mostly valid and can be important for various types of businesses, they neglect to mention the difficulties faced by investors as indicated by outside measured indicators, as discussed above.

56. **Box - Property rights and Corruption, critical factors deteriorating business climate in Paraguay**

Protection of **property rights** is extremely weak. Commercial and civil codes cover bankruptcy and give priority for claims first to employees, then to the state, and finally to private creditors. Acquiring title documents for land can take two years or more. Paraguay has increased the seizure and destruction of counterfeit and pirated goods. The government does not have a framework for safeguarding confidential data associated with regulatory approvals. As a result, some companies have decided not to market certain products, such as the latest pharmaceuticals, in Paraguay.

**Corruption** is perceived as widespread. Paraguay ranks 138<sup>th</sup> (worsened to 146<sup>th</sup> in the 2010 measurement) out of 179 countries in Transparency International's Corruption Perceptions Index for 2008. Paraguay has a legacy of institutional corruption after decades of dictatorship. The multibillion-dollar contraband trade that occurs on the borders with Argentina and Brazil also facilitates money laundering. Weak institutions impede anti-corruption efforts. The slow pace of judicial reform and continued impunity are barriers to development.

Source: The Heritage Foundation.  
<http://www.heritage.org/index/Country/Paraguay#property-rights> Accessed on November 15<sup>th</sup>, 2010.

Agriculture and forest businesses are also affected by many of the conditions that these indexes try to measure. However, due to their special characteristics, it is more useful to try to identify the principal factors that influence businesses in this sector, the relationships among them, and how they impact investment profitability. This modeling helps not only to understand the situations better, but also is critical for the design of

actions that can improve the chances for entrepreneurs' success. These are the goals of the next section of the chapter.

57. One example of index that tries to measure the business climate for forest based investments is the Forest Investment Attractiveness Index (IAIF, from the Spanish acronym). The IAIF's purpose is to clarify governments, investors and other stakeholders which are the factors that affect, lead to success, and attract private direct investment, domestic or foreign, to the forestry sector.

58.

**Box - 10 Reasons to Invest in Paraguay**

These are the principal reasons that the GoP uses in its Investment promotion efforts to attract foreign investments:

1. *Highest monetary and fiscal stability in Latin America (never had sharp devaluation, expropriation or freezing of savings, etc..) Low tax rate and a very simple tax system;*
2. *Quick recovery of economic growth and investment after the 2008-2009 crisis, 6% GDP growth in the first half of 2010 based on food production whose global demand tends to grow;*
3. *Attractive Investment Laws for Maquila Regime, foreign investment, free trade zones, and tax exemptions and others benefits for investors;*
4. *Access to MERCOSUR, a free trade area with a GDP of USD 2 billion, which also includes Argentina, Brazil and Uruguay;*
5. *Excellent cost-benefit ratio for labor costs including low social security contributions on wages;*
6. *Population mostly young and easily trainable;*
7. *Abundant availability of electricity at lowest rates in the region;*
8. *At the center of the Paraná-Paraguay, Paraná-Tiete Waterways navigable mostly throughout the year;*
9. *Mild climate and absence of natural disasters; and*
10. *Abundant water and fertile land for agriculture.*

Source: REDIEX site (<http://www.rediex.gov.py/porque-invertir-en-paraguay-i2#en> ) visited on December 5th, 2010. The English version was slightly edited by the author to correspond better to the Spanish version found in the same page

This Index seeks to measure countries' attraction for direct investment in sustainable forestry business. The IAIF allows: (i) to compare the performance countries in the same year and the trend over time, (ii) to assist investors to pre-identify the countries where sustainable forest business will most likely be successful, and (iii) to clarify for countries which SUPRA, INTER and INTRA factors most affect their business climate for

sustainable forestry investments.

59. The IAIF methodology considers 80 variables that make up a total of 20 indicators (several of them, exclusive) that are integrated into a model that seeks to explain and predict levels of direct investment in the sector. The IAIF was applied to the IDB borrowing countries based on data from 2004 and 2006. The results achieved for 2006 and further details about IAIF's methodology are presented in Annex 10. Table - Paraguay's performance. Forest Investment Attractiveness Index (2006) shows the detailed IAIF results for indicators and sub-indexes for Paraguay calculated using 2006 data.
60. Paraguay, according to this Index, is the fourth least attractive country for investment in forest based businesses among the 23 countries studied in the Latin America and the Caribbean region. It reaches only 33 out of a total of 71 maximum points possible that Paraguay can reach, implying that there is much room for improvement in the conditions that lead to investments in the sector.
61. This can best be seen by identifying the indicators that have the greatest potential for improvement when one compares the 2006 performance with the theoretical possible score which is shown in the last column of the Table - Paraguay's performance. Forest Investment Attractiveness Index (2006). For instance, the IAIF indicates that all Inter Sectorial factors, except social infrastructure, can at least double its performance while Licenses and Permits, and Property Rights can improve fourfold. All Intra Sectorial factors can be at least twice as better while Favorable Support can be improved 279%.

Table - Paraguay's performance. Forest Investment Attractiveness Index (2006)

Indicators / Sub index / IAIF	Rating in 2006	Max. rating possible	Potential growth in %
GDP Growth Rate	70	100	43
Passive Real Interest Rate	86	100	16
Exchange Rate Stability	100	100	0
Trade Openness	69	100	46
Political Risk	57	100	75
Tax Share of GDP	69	100	45
<b>SUPRA Sectorial Sub index</b>	<b>75</b>	<b>100</b>	<b>34</b>
Economic infrastructure	46	100	117
Social Infrastructure	76	100	32
Licenses and Permits	25	100	300
Labor	36	100	178
Capital Market	29	100	240
Property Rights	25	100	300
Capital and Foreign Investment Flow	50	100	100
Agricultural Policies	33	100	200
Planting and Harvesting Restrictions	47	100	112
<b>INTER Sectorial Sub index</b>	<b>41</b>	<b>100</b>	<b>145</b>
Forest Resources	15	30	100
Favorable Support	26	100	279
Domestic Market	5	10	100
FVL	5	10	100
Adverse Actions	44	100	129
<b>INTRA Sectorial Sub index</b>	<b>19</b>	<b>49</b>	<b>162</b>
<b>IAIF</b>	<b>33</b>	<b>71</b>	<b>114</b>

Source: Annex 10.

62. The overall growth potential for the Paraguayan IAIF is 114%, pointing to the existence of substantial room for implementing policies aimed at improving the attractiveness of forest investment. The detailed analysis of the indicators that form the Index suggests the priority areas for intervention.
63. The model presented here is helpful to understand the current situation of a country, how its performance compares with others, what its potential performance could be if all factors could be made to reach their maximum scores, and how to identify priority areas and actions to create an action plan to improve such business climate. To design these plans, however, it is necessary to undertake a detailed and periodic planning process that can systematically identify the priority factors, analyze their current and potential situations, and design interventions to move the future expected situation towards a desired future or vision for the sector.
64. It is beyond the scope of this study to calculate the most recent score Paraguay can obtain in the corresponding indicators for agriculture related investment attractiveness. It is, however, strongly recommendable that such calculation be undertaken periodically not only for this country, but also for other nations. Besides its use in the design, monitoring and evaluation of interventions, this periodic calculation would allow several types of comparisons among countries, promote healthy competition among them, and help investors select the best countries to establish their agriculture and forest businesses.

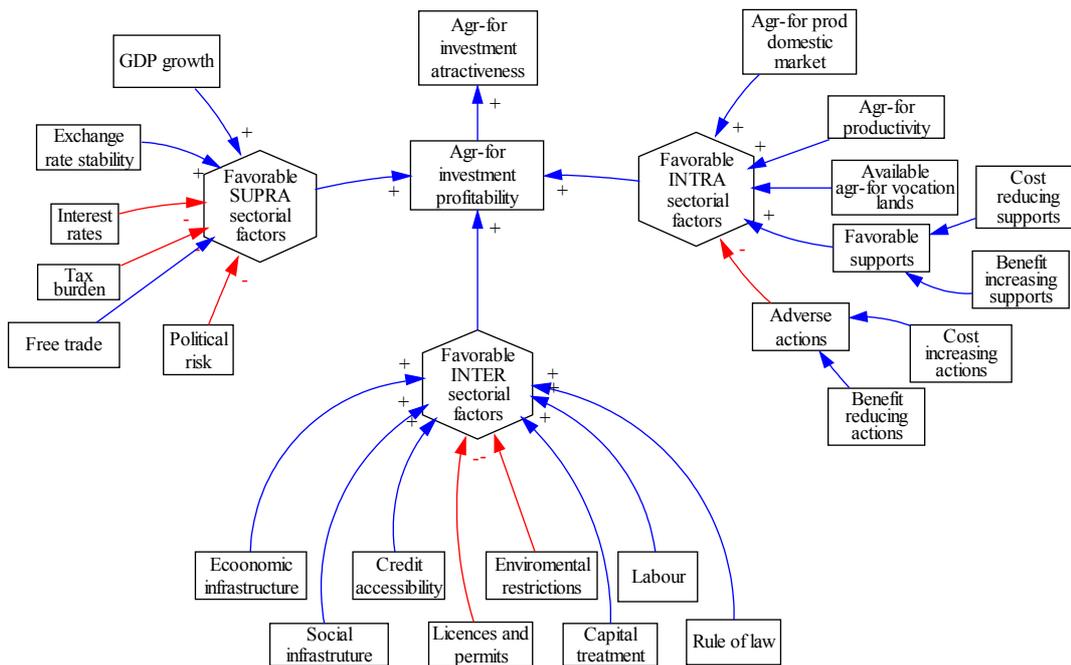
65. Nevertheless, the present discussion and that of other chapters of this study do provide sufficient information for the preparation of a framework that includes the design of interventions to improve the business climate for agriculture, forest, and rural investments in Paraguay. This is the purpose of a latter chapter of the present study.

### ***B. Business Climate Model for Agriculture Investment***

66. A model has been developed to better understand and serve as the basis to improve the conditions for successful investing in agriculture and forest based sustainable businesses. It assumes that a country will be more attractive for agriculture and forest based sustainable business investments, the more profitable such investments are likely to be. The profitability of these businesses in a country depends on the costs investors have to face and the expected benefits from their operations.

67. The model shown on Figure - Model of factors influencing the attractiveness of direct investments in agriculture and forest businesses, proposes that costs investors have to face and the expected benefits from their operations are affected by three groups of factors: the SUPRA Sectorial, the INTER Sectorial, and the INTRA Sectorial factors. Combined, the SUPRA and the INTER sectorial factors are also called EXTRA sectorial conditions since they are variables that are not considered as part of the agriculture or forest based sector. The following sections will discuss briefly the principal factors that constitute each of these three groups.

Figure - Model of factors influencing the attractiveness of direct investments in agriculture and forest businesses



Modified from (Nascimento and Tomaselli 2007).

## 1. SUPRA Sectorial Factors

68. SUPRA sectorial factors influence the performance of firms in all sector of the economy, including the agriculture, forestry, and rural based ones. They include macro economic conditions and political risk. There are six main factor in the SUPRA sectorial group that are found to affect substantially the conditions for the success of agriculture or forest based businesses: 1- Gross Domestic Product growth; 2- Exchange rate stability; 3- Interest rate; 4- Tax burden; 5- Free trade; and 6- Political risk.
69. There are two hypotheses relating these factors and how they affect the profitability of agriculture or forest based business. The first indicates that, as the factor increases (decreases), then the profitability is also expected to increase (decrease); that is, they move in the same direction. As mentioned in the Chapter I, this is represented in Figure - Model of factors influencing the attractiveness of direct investments in agriculture and forest businesses by a blue arrow with a positive (+) sign at the point of the arrow. Therefore, the model states that profitability is expected to increase the faster GDP grows, the Exchange rate is more stable; and/or the economy is more open allowing for cheaper transaction costs for import and export. On the other hand, profitability is expected to decrease as GDP shrinks, the Exchange rate is more unstable; and/or the economy is more closed allowing for more expensive transaction costs for import and export.
70. The red arrows with a negative sign at their points (-) indicate the second hypothesis. In this case, as the factor increases (decreases), then the profitability is expected to decrease (increase); that is, they move in opposite directions. Therefore, profitability of agriculture or forest based business is expected to increase as Interest rates get smaller, the Tax burden is

less expensive; and/or the political risk reduces. On the other hand, profitability is expected to decrease as Interest rates get larger, the Tax burden is greater; and/or the political risk increases.

## 2. INTER Sectorial Factors

71. The INTER sectorial factors are those that are managed by other sectors of the economy but which have substantial impacts on the cost and benefit structures of agriculture or forest based businesses. The model identifies eight of these factors: 1- Economic infrastructure; 2- Social infrastructure; 3- Credit accessibility; 4- Licenses and permits; 5- Environmental restrictions; 6- Capital treatment; 7- Labor; and 8- Rule of law. Table - Brief description of the INTER sectorial factors. provides a summary of explanations of these factors.
72. Here too there are the same two hypotheses relating these INTER sectorial factors and how they affect the profitability of agriculture or forest based businesses. Thus, the blue arrows indicate that, as factors like Economic infrastructure, Social infrastructure, Credit accessibility, favorable Capital treatment; competitively priced and productive Labor; and Rule of law effectiveness increases (decreases), then the profitability is also expected to increase (decrease); that is, profits tend to move in the same direction these factors move.
73. On the other hand, the red arrows indicate that as factor like Environmental restrictions and Licenses and permits (decreases), then the profitability of agriculture or forest based business is expected to decrease (increase); that is, they move in opposite directions.

**Table - Brief description of the INTER sectorial factors.**

<b>Factors</b>	<b>Brief description</b>
<b>1-Economic infrastructure</b>	Includes availability of economic infrastructure services at competitive prices and quality such as those provided by roads, communications, energy, ports, railroads, airports.
<b>2-Social infrastructure</b>	Includes availability of social infrastructure services at competitive prices and quality related to human development such as education; health; water, sewage & waste disposal.
<b>3-Credit accessibility</b>	Includes the sophistication of financial and capital markets, availability of credit at competitive terms as well as other capital markets instruments.
<b>4-Licenses and permits</b>	Includes bureaucratic procedures and legal requirements to open, operate, and even close firms and that take much time, efforts, and other resources to comply with.
<b>5-Environmental restrictions</b>	Unfounded or useless environmental restrictions that increase firms' costs without generating environmental benefits.
<b>6-Capital treatment</b>	Includes barriers and restrictions to the movement of capital into, out of, or within the country.
<b>7-Labor</b>	Includes the costs generated by labor legislation, the level of general productivity and the availability of skilled workers at competitive prices.
<b>8-Rule of law</b>	The existence of favorable legislation, enforcement, and justice services. Includes clear definition and protection of property legislation; respect to the letter of contracts, and timely justice at reasonable cost.

Source: Adapted from (Nascimento and Tomaselli 2007)

## 3. INTRA Sectorial Factors

74. The INTRA sectorial factors are those that are managed by public or private actors found inside the agriculture or forest based sector of the economy. These factors, by definition are under the control of these actors and can be intervened more directly by them. The model identifies five of these factors: 1- Agriculture or forest products domestic market; 2- Agriculture and forest productivity; 3- availability of agriculture and forest vocation lands; 4- Favorable supports; and 5- Adverse actions. Table - Brief description of the INTRA sectorial factors. provides a summary of explanations of these factors.

75. Except for Adverse Actions, all other INTER sectorial factors move profitability in the same direction as they move. That is, as these factors increase (decrease), then the agriculture and forest based businesses profitability is also expected to increase (decrease).

**Table - Brief description of the INTRA sectorial factors.**

<b>Factors</b>	<b>Brief description</b>
<b>1-Agriculture or forest products domestic market</b>	Includes the size of the domestic consumption of inputs and outputs of the agriculture and forest based sector. It also includes the domestic consumption associated with the export of outputs from the sector.
<b>2-Agriculture and forest productivity</b>	Includes the land productivity of agriculture or forest based businesses. It is directly associated with the technologies used for production in the country.
<b>3-Availability of agriculture and forest vocation lands</b>	Includes the size of lands in the country that are arable, or are forest vocation lands. Agriculture production is often, but not always, more competitive in arable lands than forest production, while the opposite is true for forest vocation lands. (J. R. Nascimento 2005).
<b>4-Favorable supports</b>	Includes policies and measures taken the public or private sectors that reduce costs or increase benefits for investors.
<b>5-Adverse actions</b>	Includes policies and measures taken the public or private sectors that increase costs or decreases benefits for investors.

Source: Adapted from (Nascimento and Tomaselli 2007)

76. The bigger the domestic market for agriculture and forest products, including those used as input for export products or directly sold overseas, the more profitable the agriculture and forest businesses can be, *ceteris paribus*. Conversely, the smaller the domestic market for agriculture and forest products, including those used as input for export products or directly sold overseas the less profitable. However, the size of the domestic market is not easily modified by public policy. It can change only if agriculture or forest products prices times the quantities consumed increase. To consume more implies a change of taste of consumers and/or an increase of income, assuming the products are income elastic. Especially when markets are small and its growth is not expected to be fast, countries have to consider the regional and/or world markets as their targets, and seek to increase export of competitive products. This vision of an agriculture or forest products exporting country requires the adoption of interventions to increase the attractiveness of direct investments in the sector. So policies that seek economic and trade integration or free trade agreements can potentially increase this factor substantially. However, this indicator is based on actual exports, which means that domestic producers are competitive to be able to export.
77. Agriculture and forest productivity are critical factors that are important for the competitiveness of a country. Among other factors, productivity depends on the availability and adoption of appropriate technology; production inputs such as seeds, fertilizers, machinery; skilled labor and professionals; and supporting services. Research, technical assistance, adaptation of technologies, and other innovations are key to increase productivity.
78. Available agriculture and forest vocation lands (FVL)<sup>3</sup> are a critical factor for the attractiveness of a country for sustainable investments in the sector. The greater the land area a country has that can potentially be used for agriculture or forest production, the greater the

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<sup>3</sup> Forest Vocation Lands are those that, due to their physical site features such as soil, topography, and the rainfall it receives, should be kept under forest cover or other sustainable land use if soil or water related negative externalities are to be avoided. FVL classification does not depend on the type of cover the land actually has, nor does it depend on the requirements it may have for agriculture crop or forest production. Therefore, lands with no forest cover or use can still be classified as FVL if their physical features so indicate; while lands covered with forest may not be FVL. (J. R. Nascimento 2005).

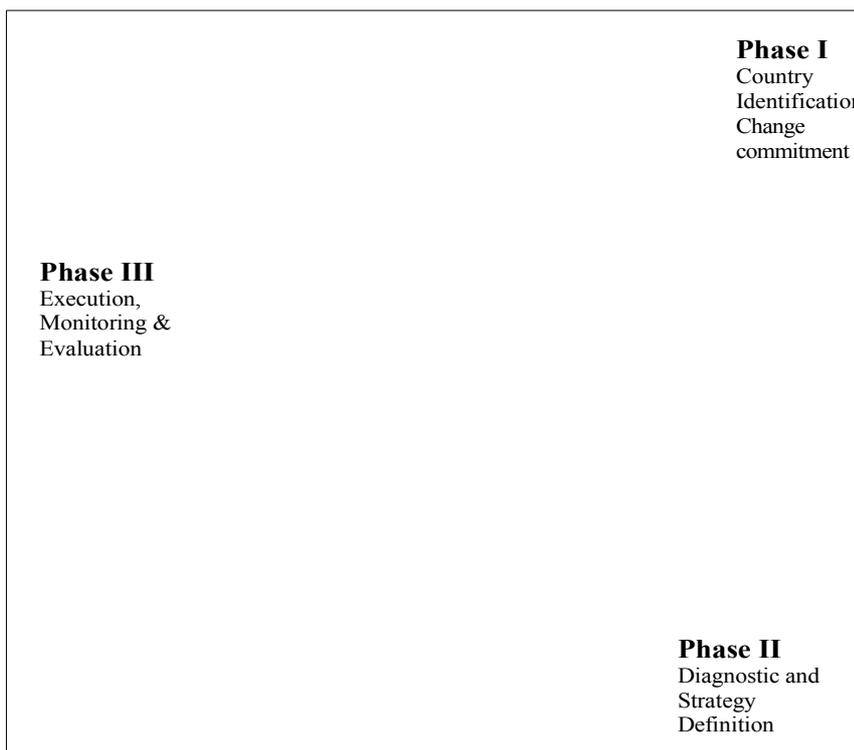
contribution of this factor to the INTRA sectorial conditions that favor successful agriculture or forest businesses. However, the physical existence of such lands is not enough. They have to be accessible to investors through secure and relatively flexible mechanisms that allow long term investments to be made as well as easiness of exit if so desired.

79. Favorable supports are divided in two groups: those policies, and actions or inactions by governments that reduce investors' costs, and those that increase benefits. These supports are identified usually as a result of detailed analyses of surveys of the perceptions of investors, producers, academics, and other stakeholders.
80. Adverse actions are also divided in two groups: those policies, and actions or inactions by governments that increase investors' costs, and those that decrease benefits. However intriguing, government's mostly good intentions not always result in favorable conditions for investors. Using the same methods described for Favorable Supports, it is possible to identify such situations which need to be corrected to improve business climate.

## V. Business Climate Improvement Process to Attract FDI into Agriculture Sector.

81. Successful agriculture and forest businesses depend on natural resources, human resources, capital and favorable climate for investments. Although Paraguay counts with substantial natural resources such as soil, topography (Annexes 8 and 9), and climate, which are the only resources that cannot easily be created or hired, it has much room for improvement in the other conditions for the success of businesses as discussed in Chapter IV. Agriculture and forest based businesses, therefore, cannot further contribute to prosperity and are unlikely to generate additional benefits to society that they otherwise could without these constraints.
82. It is expected that when a country knows its performance in the IAIF (Annex 10), learns the level of attraction of its benchmark countries, and understands what are the factors that contribute to and those that detract from sustainable forest businesses in the country, it is more likely that it becomes interested in finding ways to improve the investment climate for such businesses.
83. With the purpose of helping to organize the efforts of countries to improve the investment climate for sustainable forest businesses, and therefore increase direct investment, the Inter-American Development Bank has prepared a methodology, called Forestry Investment Business Climate Improvement Process - PROMECIF.
84. The PROMECIF (Annex 10) seeks to help countries improve the business climate through the implementation of a systematic and cyclical process that includes confirmation of the interest of the country to take steps to make adjustments necessary, the development of diagnosis, definition of a strategy, and the design, implementation, monitoring and evaluation of an Action Plan with selected measures.

Figure - PROMECIF Phases Cycle



85. The Process supports countries to identify the relative importance of the factors that affect sustainable forest business, facilitating the design of strategies and actions to promote investment attraction. PROMECIF uses the IAIF factors, indicators and sub-indexes at all stages of the process, either as elements of

analysis, interventions design, simulations, or as indicators for monitoring and ex-post evaluation.

86. Even though the IAIF and the PROMECIF are tools designed for forest based investments, the demonstration of their application may help to understand how similar tools designed on the basis of a model such as the one shown in Figure - Model of factors influencing the attractiveness of direct investments in agriculture and forest businesses can be used to help Paraguay improve its attractiveness to foreign investors.

### **A. Overall Process**

87. The PROMECIF is a cyclical process that seeks to identify, develop, implement, monitor and evaluate actions that modify the factors that affect the attractiveness of a country to investment in the forestry sector. Such a process is divided into three interdependent phases (Figure - PROMECIF Phases Cycle):
88. Since the purpose of this section is to explain how this process can be useful to understand Paraguay's situation, the following sections will try to apply partially only PROMECIF phase II while the other two phases are only briefly explained. The entire process is discussed in more details in Annex 10. This Chapter relies substantially on the actual PROMECIF application done by the Getulio Vargas Foundation of Brazil under contract with the IDB (Fundação Getulio Vargas / Banco Interamericano de Desarrollo 2008).

### **Phase I – Country Identification and Change Commitment**

89. Phase I is divided into 3 stages: (i) Promotion, (ii) identification, and (iii) Coordinating Committee. In the promotion stage, available IAIF results will be presented to stakeholders, showing the country's performance in absolute terms or relative to other countries or subregions, as well as identify the critical factors to the success of investment in sustainable forestry businesses. Then, motivated by those involved in the forest private sector, the government may be persuaded to apply the PROMECIF methodology. For this, the government needs to formalize its interest by signing a commitment to the solution of such factors (identification phase). Finally, the last stage of this phase is to form a committee to coordinate all activities related to the implementation of PROMECIF and allow for stakeholders participation. This Coordinating Committee (CC), whenever possible, should be placed within the scope of the national institutions promoting competitiveness. In the case of Paraguay, the CC was established as a under the auspices of the *Red de Inversiones y Exportaciones* (REDIEX) a branch of the Ministry of Industry and Commerce that coordinates stakeholders and hosts efforts to improve the country's competitiveness.
90. The CC of PROMECIF had primary responsibility for coordinating the implementation of Phases II of PROMECIF.

### **Phase II - Assessment and Strategy Definition**

91. The expected outcome of phase II is a strategy to improve the business climate for forest-based business investments, including a Diagnostic and an Action Plan.

### **Diagnostic**

92. The diagnostic aims to characterize the current situation of the sector and trends, and the future situation desired by stakeholders, so as to allow the identification of problems or

opportunities. The diagnostic should also analyze and explain how the expected future situation came to be so.

93. The diagnostic uses the IAIF and its indicators and models to analyze the causes and effects that generate and are generated by each factor. For the identification and examination of these interactions, the use of the systems dynamics methodology of analysis is suggested.
94. To generate these products, the diagnostic stage uses two types of analysis: IAIF analysis, and Complementary Analysis.
95. The IAIF analysis and that of its sub-indexes, indicators and variables, is based on data which, in most cases, are measures of process outcomes. This analysis is useful, as discussed below, to characterize the expected future situation, the desired future situation, and identify problems and opportunities associated with forest business climate. However, this type of analysis is less useful for explaining the processes that resulted in the expected future situation. For these explanations it is necessary to undertake complementary analysis, which is presented below.

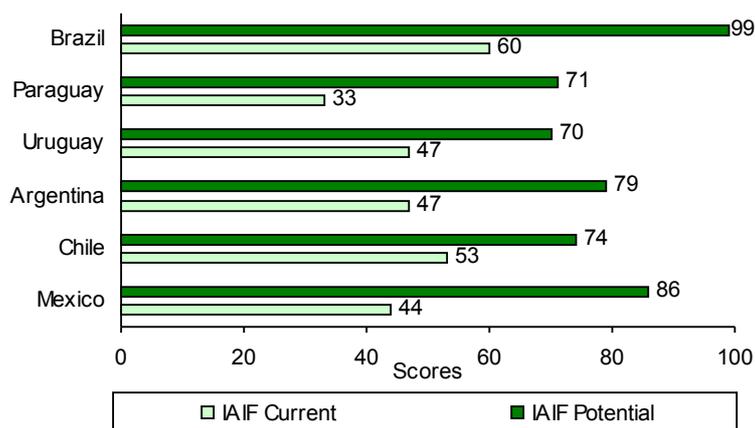
#### - Analysis of IAIF Sub-indexes and Indicators

96. The IAIF is a useful tool to make diagnostics because it allows measuring the indicators that affect a country's forest investment business climate. Due to its characteristics of simplicity, clarity, accuracy, measurability and validity, the IAIF, if properly used, can lead to countless forms of analysis.
97. The analysis of IAIF will cover the results for Paraguay and how it compares with other countries or the subregions most relevant for the country. These results, as shown below, may be presented in different forms in order to allow the analyst better understanding of the situation.

#### **The IAIF Analysis**

98. The analysis can begin with the use of the IAIF results (in its three forms: actual, potential and differential) and comparisons with results for other countries and/or regions relevant to the selected country.

Figure - Comparison between IAIF of Paraguay and selected countries



<sup>1</sup> IAIF 2006

99.

Through the IAIF analysis, it will be possible to identify convergences and contrasts between selected countries and of their performance in terms of attracting investments into the sector. In this sense, one can compare a given country, for example, to countries: (i) with better IAIF performance; (ii) that are neighbors; (iii) with similar GDPs; (iv) with similar TVF; (v) with equivalent territories; among other criteria. (Figure - Comparison between IAIF of Paraguay and selected countries)

### Sub-indexes Analyses

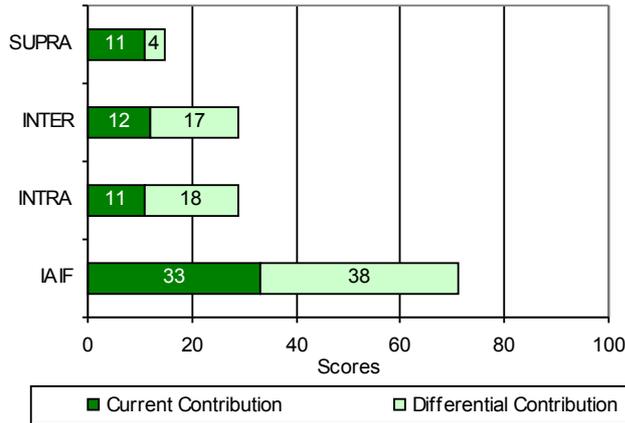
100. After analyzing the IAIF, one can analyze and compare the results of the SUPRA, INTER and INTRA sub-indexes using also the same three forms (current, potential and differential). The analysis of the sub-indices is useful to identify which groups of factors deserve greater attention for interventions that seek to improve the business climate.

101. Figure - Sub indices Contributions to Paraguay IAIF 2006 score shows a simplified example of the type of analysis that can be used for sub-indexes. In this case, the current contribution of each sub index is being compared with the difference for maximum potential reading for that sub index, clearly showing the importance of Inter and Intra sectoral sub-indices as including important areas of intervention with the greatest potential to improve business climate for forest investments.

### Indicators Analysis

102. One can analyze every factor that makes up the IAIF, i.e., understand and examine each of the 20 indicators and the more than 80 variables that make up these indicators. To increase the effectiveness of diagnostic, it is useful to further analyze the indicators found to have the greatest potential for improvement.

Figure - Sub indices Contributions to Paraguay IAIF 2006 score



103.

For that, it is necessary to know what the country's growth potential in each indicator is by calculating the spread between the current and potential scores. The advantage of this type of analysis is to identify the priority factors for further consideration. Thus, in principle, the priority should be given to the factors that have the greatest contribution to increase IAIF performance of the country, and consequently greater impact in improving the investment climate for forest based businesses.

104.

Figure - Sub indices Contributions to Paraguay IAIF 2006 score shows that the IAIF analysis should concentrate in the indicators of the Inter and Intra Sub Indexes since they are the ones which have the greatest potential for improvement. Figure - Current and Differential Scores of IAIF 2006 Indicators - Paraguay helps to identify the priority indicators within these sub-indices and how they compare to each other, by analyzing the current and differential scores for each indicator.

**Figure - Current and Differential Scores of IAIF 2006 Indicators - Paraguay**

105. Analyzing each indicator in absolute terms, Figure - Current and Differential Scores of IAIF 2006 Indicators - Paraguay shows that the greatest differential scores are in the INTER and INTRA sectoral sub-indices which, therefore, should receive prioritized attention. Factors such as Regulations, Property Rights, Forest-Industry Business Support, Labor Force, Agriculture and Livestock Policies, and Adverse Actions can be highlighted
106. However, it is still necessary to analyze how the priority is affected by the weighting of the sub-indices. The most important indicators may change when considering the weights. This type of analysis, which considers the weighting of the sub-indexes, can be done using the contribution of the indicators to the IAIF score as presented in Figure - Current and Differential Contributions for IAIF 2008 Indicators - Paraguay. The use of weighting can confirm some indicators or identify other priority indicators.

**Figure - Current and Differential Contributions for IAIF 2008 Indicators - Paraguay**

107. Figure - Current and Differential Contributions for IAIF 2008 Indicators - Paraguay shows the indicators that can contribute most to achieving the potential Paraguay's IAIF score, i.e., those indicators that deserve priority interventions to improve their performance and which can result in greater positive impact on the investment climate for sustainable forest businesses.

108. The final result of the IAIF analysis process is to define the priority factors for future intervention. The factors identified by the IAIF analysis for Paraguay based on 2006 data are, in decreasing priority order:

1. Forest industry Business support;
2. Adverse Actions;
3. Property rights
4. Licenses and Permits
5. Capital Markets
6. Labor.
7. Economic Infrastructure; and
8. Agriculture and Livestock Policies

**Box - Land Property Rights in Paraguay**

Due to Paraguay's economic dependence on agriculture and livestock and the reliance of many Paraguayans on those sectors for their livelihoods, the way that land is managed heavily impacts production, livelihoods and the management of natural resources. In particular, the question of land in Paraguay today has two primary elements: (i) extreme inequality in land tenancy; and (ii) extensive irregularities in land titling.

The existing distribution of land in Paraguay is grossly unequal and is one of the most inequitable in Latin America. In the Eastern Region, where most poor farmers live, 16% of rural landholdings account for 86% of the land. Further complicating the situation, land tenancy among small-scale farmer households is plagued by lack of titles, a situation that affects about 60% of Paraguay's population, and numerous cadastral problems. This land situation not only makes it extremely difficult for small-scale farmers to diversify their production, thereby improving food security and increasing income, it is also a major disincentive to invest resources in environmentally friendly productive practices on the land.  
Source: Annex 2.

109. These factors were analyzed in further details by the Getulio Vargas Foundation. Here, only a brief description of the rest of the process will be provided. More details of the methodology can be reviewed in Annex 10 and (Fundação Getulio Vargas / Banco Interamericano de Desarrollo 2008).

### **Complementary Analysis**

110. To further the diagnostic, it was necessary to undertake complementary studies for each of these priority indicators. These studies need to identify and fill gaps in data, information and analysis available to explain how their expected future situations came to be. The complementary analysis also helped the CC to define the desired future situation, to identify problems or opportunities, and helped to design strategies and specific actions to achieve that desired future situation.

111. The steps that must be observed in the development of complementary analysis for each indicator are: Collection of information; Analysis of the dynamic of factors that explain the business climate; Definition of the expected future situation; and Definition of the desired situation for the future.

112. The priority factors identified in the previous stage (IAIF analysis) must be studied in detail in order to improve understanding of the mechanism by which they affect the investment climate. Furthermore, it should explain the processes that lead to the current factor situation, and identify actions to minimize or maximize their influence, in the case that they inhibit or promote, respectively, investment in sustainable forest businesses.

113. With the identification of problems or opportunities and the processes that have generated them, the diagnostic stage is concluded and a strategy and action plan to improve business climate can be designed.

### **Defining Strategy**

114. Based on the diagnostic and identification of problems and opportunities, one can design and analyze alternative intervention strategies to improve the business climate for forestry investments.

115. It is important that members of the Coordinating Committee, acting within their respective competence, adopt the recommended interventions. They can act directly whenever possible or articulate with other authorities such adjustment. For each group of factors, the strategy to improve the business climate should consider the following types of intervention:

- Strategies related to SUPRA sectorial factors should be based on the dissemination of the results of studies demonstrating the impact of the variables involved on the forestry business. It is unlikely that such studies alone are sufficient to lead the competent authorities to change. However, the information is important to contribute to the national debate on these issues and make clear to potential investors in the sector, the nature of the problems and opportunities they face;
- INTER sectorial factors are similar to SUPRA ones since forest businesses investors are not the only ones affected by them. However, the relationship between these factors and the profitability of forest based investments are much more direct and may reveal situations where they are the most important ones when compared with other groups of factors. Through case studies and clear evidence, members of the Coordinating Committee may make adjustments, or articulate the need for the competent authorities to take the necessary measures to promote sustainable forest business;
- INTRA sectorial factors deserve more attention and detail in the identification, design and analysis of the action lines. This is because forests and other public authorities can have more control over them and because their improvement have a heavier weight in the IAIF. One can expect actions to be proposed legal actions, institutional, policy adjustment, or making investments that result in solving the problems or opportunities.

### **Action Plan**

116. The set of strategic interventions or actions selected by the CC to make SUPRA, INTER or INTRA factors more favorable to forest businesses will form the Action Plan. The methodological tool recommended to be used to prepare and implement the Plan of Action is the Logical Framework.

#### **Phase III - Implementation, Monitoring and Evaluation**

117. Once the Plan of Action is validated by the CC, the PROMECIF implementation process can start. The process begins with identifying the most appropriate funding sources for each strategic action selected. Then, one has to design and analyze in detail the projects using the procedures and complying with the requirements of the funding source. Once the project is approved, the project is implemented, and monitored & evaluated by the executor,

by the CC, and by independent entities. Finally, after the project execution is completed, its results and records of the implementation are evaluated to so that lessons can be learned to be applied in future projects. The ex post evaluation also helps to identify further actions still needed to achieve the future desired situation which should become part of a new cycle of PROMECIF.

### ***B. Improving Business Climate Critical Factors<sup>4</sup>***

118. This section presents the result of the implementation of the Process to Improve the Business Climate for Investment in the Forestry Sector (PROMECIF) for Paraguay. It consolidates the analysis and recommendations, and provides an Action Plan to improve the business climate for forest-based investments in Paraguay. The study used the results of a survey conducted among stakeholders of the forestry sector of that country for the calculation of the Forest Investment Attractiveness Index (IAIF, from the Spanish acronym). Additional analysis deepened the factors highlighted by the IAIF and developed a diagnosis indicating the main problems faced by and opportunities offered to investors interested in sustainable forest businesses in Paraguay. After defining a vision for the forestry business in the country and comparing it with industry trends, a strategy and action plan with five projects to overcome existing obstacles to competitive conditions in the forestry sector were developed. With the implementation of the Action Plan, Paraguay is expected to improve its performance in the next measurements of the IAIF and become a more attractive country for investment in sustainable forest businesses.
119. **Modest performance and great potential.** The performance score of Paraguay in the IAIF calculated for the year 2006-7 was estimated at 33 points. If all the conditions affecting the forestry business in the country had an excellent performance, the maximum potential score for Paraguay is 71 points. There is, therefore, an excellent opportunity for carrying out actions and investments to turn Paraguay into one of the most attractive countries in Latin America for investment in sustainable forest businesses. Although its 2006-7 IAIF performance has been relatively low, its potential is above the potential scores of Uruguay and Ecuador, and is close to that of Chile and Bolivia. In fact, as the best performer in the 2006 IAIF is Brazil with just 60 points, a substantial improvement in the business climate for forestry investments resulting from the adoption of the Action Plan recommended may lead Paraguay to become a fairly competitive country. This will allow the country to enjoy forest development benefits and investment levels similar to its MERCOSUR neighbors already enjoy.
120. **Priority factors for intervention.** Paraguay can improve its performance in the sub-indexes Inter-sectoral and intra-sectoral as much as 18 and 17 points, respectively, to achieve the country's IAIF potential. Among the inter-sectoral sub-index indicators, the following are priorities for the adoption of actions and investments to improve conditions: property rights are; regulations, capital markets, labor, economic infrastructure and agricultural policies. Indicators Intra-sectoral priorities include the following indicators: support for forestry and industrial business, and adverse actions. The priority factors that can contribute most to improve the existing business climate, the country's performance in the IAIF and consequently make it more attractive for investments in forestry are, in descending order of importance: 1. Support for forestry and industrial businesses, 2. Adverse actions; 3. Property rights; 4. Regulations 5. Capital market or access to credit; 6. Labor; 7. Economic infrastructure; and 8. Agricultural policies.

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<sup>4</sup> Translated and adapted by the author from (Fundação Getulio Vargas / Banco Interamericano de Desarrollo, 2008)

121. **Problems to address and opportunities to exploit.** Paraguayan and foreign investors interested in producing and / or exporting forest products or do other businesses based on natural and planted forests in the country face a number of important issues, but also have some important opportunities. In terms of intra-sectoral factors, they have little support for the implementation of forest business and, in fact, face state policies and actions that are adverse to their businesses generating unnecessary costs and reducing profits. In addition, investors count with few natural forest resources which continue to decline as a result of adverse business climate for their sustainable use. Similarly, such conditions have not favored the formation of high-yield forest plantations that can serve as a basis for export or for any future deployment of industries that rely on such inputs. Forest Vocation Lands are not clearly identified and policies that promote their sustainable use are not in place. This makes TVFs generate erosion and surface runoff while Non-Forest Vocation Lands which could receive more flexible agricultural uses (in accordance with the relative competitiveness of each use on specific sites and the interests of the landowner), are underutilized generating opportunity costs for its owners and society.
122. In terms of inter-sectoral factors, investors are faced with costly requirements for the establishment and operation of their business. They also have no clarity or certainty that the ownership of land and other properties will be respected and protected by the state, which is a staple for any business development strategy as forest timber production requires investments in medium to long term to be sustainable. Investors also have no access to financial resources from development or commercial banks in the quality, timeliness, and quantity to establish or operate the various types of forest business that exist. The Labor factor also indicates that the investor has to face difficult and expensive regulation for recruitment and human resource management, and that labor productivity is relatively low.
123. In addition, there are few forestry workers and professionals with the skills and knowledge of high-performance production processes. Investors will also face high transport costs in certain areas of the country that can prevent or lessen lucrative investment returns materially. Finally, Investors interested in the forestry sector will realize that various agricultural policies distort the costs and benefits by privileging agricultural investments and making forest investments less competitive.
124. On the side of **opportunities**, the country has relatively stable Supra sectoral factors, and regulations for foreign investment and the tax burden are particularly competitive. Investors will not face materially restrictive policies for forest plantations or their uses. Capital flows and foreign investment factors are also relatively favorable. There is also the physical existence of land with good soil and climate conditions for forest plantation and availability in multiple locations of abundant electricity at competitive cost. The country is located close to major consumers of forest products whose markets are relatively open for export provided Paraguay can deliver such products at competitive prices. Finally, Paraguay has a traditional timber sector with potential to modernize and allow the country to enter niche markets that require more sophisticated products with high value added and have higher returns per unit produced.
125. **The vision for the future of forestry businesses in Paraguay.** Members of the PROMECIF's Coordinating Committee are convinced that sustainable forest business in Paraguay can:

- a. "Contribute to sustainable development and poverty alleviation in the country through the production of forest goods and services for export and domestic consumption; the generation of income opportunities, jobs and foreign exchange; and the improvement of environmental quality as a result of better land use.
- b. To do this, Paraguay can be seen, in the near future, as a major producer and exporter of products and services associated with forest plantations with high productivity and with sustainable use of remaining natural forests resulting from the action of a dynamic and competitive private sector.
- c. The CC is confident that this will be achieved through the implementation of the actions set in a strategic agreement between the main stakeholders in the sector that will make the country more attractive to domestic and foreign private investment. These actions must be coordinated, integrated, efficient, cost-effective, fiscally responsible, and seek to improve priority inter and extra sector factors that affect the business environment for sustainable forest based investments. "

126. **Strategy and Action Plan.** The recommended strategic intervention for Paraguay seeks to improve the business climate for investments in the forestry sector so that it contributes to achieving the stakeholders' vision of becoming a major exporter of forest products. This is expected to result from increased investments in the productive chain, which in turn can maximize the contribution of the sector to the development of the country's economy.

127. Stakeholders future desired situation includes a realistic short term goal of raising the IAIF at least 37 points in the next five years and reduce the gap between potential IAIF and measured IAIF about 90%. With the adoption of concrete policy measures and actions in the medium term, and the creation of positive expectations that further steps will be taken to improve the climate in the future, Paraguay will likely start benefiting from the increased levels of investment.

128. If current conditions do not improve, it is reasonable to foresee a difficult future for the Paraguay's forest production chain. This may lead to a replay in the Western Region of the same process that led to the unsustainable use of natural forests in the Eastern Region. In addition, Paraguay will see an increasing dependence on wood related imports.

129. There is, however, potential for the forest sector, aimed at foreign markets but without forgetting domestic consumers, to become one of the driving dynamics forces of the Paraguayan economy. Given the limits of domestic market expansion, Paraguay has a population of about 6 million people and low per capita income, it is anticipated that in the long run, the dynamic engine of the sector should be the foreign markets. These markets offer opportunities both in the segment of high value-added products and commodities, such as pulp and paper, charcoal, steel, and export of logs. It is important to achieve a scale that allows operating at lower production costs and attracting large foreign firms' interest.

130. The Plan of Action prepared to implement the strategy was organized as an investment program that includes 5 projects. Each project has components which includes activities for their achievement and estimate of costs. Annex 12 shows the program's logframe.

131. Briefly, the program seeks to increase the level of direct investment in sustainable forest businesses. Each project contributes to the end of the program with actions that seek to

make the identified business climate critical factors more conducive to sustainable forest investments.

132. The 5 projects developed are: 1. Support sustainable use of TVF, natural forests more competitive, and effectively protected ecosystems, 2. Competitive and expanded forest plantations; 3. Extra-sectorial factors supporting forest business, 4. Improved forest sector governance, and 5. Forest business development services delivered. Logframes were prepared for each project including their components, activities, and estimated costs.
133. The total estimated cost for the program was USD18.9 million. It should be noted, however, that these costs do not include all the investments necessary and sufficient for the improvement of all factors affecting the business climate in this first stage. Budgeted activities in the Action Plan are those that the State Forestry Authority could execute as part of its typical mandate. Therefore, the program does not include costs of private sector or other government agencies such as the costs for improved transport infrastructure, to clarify land titles and titling, for bank lending to forest investors, to implement private business development services provision, or similar.
134. Notice also that this Action Plan should be seen as a first stage of PROMECIF implementation since it is a process aimed at continuously improving the business climate for forestry investments.

## VI. CONCLUSIONS AND RECOMMENDATIONS

135. This paper carries out a case study on the extent, nature and impact of international investments into the agricultural sector of Paraguay. The case analyzes the policies, legislation, institutions and other factors affecting international investment in the country. It finally also makes recommendations on how policies, regulations and other factors can be updated to respond appropriately to the challenges facing the agricultural sector in Paraguay.
136. Paraguay is an insular country whose economy can be classified as agriculture based. The dominance of the agriculture sector in the economy can be seen through the facts that the substantial contribution of agriculture value added as a percentage of GDP has varied from 17% to 37%, while for the year 2009, the contribution was around 24%. Agriculture is also a major source of employment being responsible in 2007 for 29.5% of the total number of jobs in the economy. Agriculture is also the principal formal export sector of the economy. Paraguay has 39.5% of its population in rural areas. It is also in rural areas that 58.7% of the country's poor are found. Around 50% of the rural population is considered poor.
137. Paraguay has received the second smallest amount of FDI in South America, only surpassing Guyana. Up to 2008, the country had accumulated a stock of over USD 2.308 billion in FDI in all sectors of the economy, which represented only 0.36% of all FDI in South American countries. The most the country has received in a single year was around USD350 million in 1998; while there have been several years since 1970 that there has been less than USD30 million in FDI a year for all sectors of the economy. The average annual foreign direct investment for the period 1990 – 2009 is less than USD141 million.
138. FDI inward flows and stocks into Paraguay are very modest. The country is one of the smallest recipients of these investments in South America. However, given the importance of the agriculture related sector for the economy which receives most of these modest FDI inward resources, they are relatively important not only in terms of the country's capital formation but also in relation to the Paraguay's total GDP.
139. FDI inflows into agriculture sector are important but a marginal portion of the economy's Agriculture Value Added. This implies that most of the investment in the sector has been done with domestic funding. Among the agriculture related industries receiving FDI, oil production was the one that got the most of the inward FDI, for a total of USD315 million up to the first quarter of 2010. In second place, beverage and tobacco received USD214.7 million of the inward FDI stock. Agriculture per se has accumulated a FDI stock of only USD94.2 million up to the same date.
140. As expected due to the small size of FDI inflows, Trans National Corporations have had a small presence in Paraguay and because of that their importance for the country's economy and the agriculture sector is limited. The small presence of agriculture related TNCs in the country has limited their economic, social and environmental impacts.
141. The impacts of inward FDI flows in a host country can be grouped in three basic classes: economic, environmental, and social impacts. These impacts may be derived from nearly any step of the value chain associated with the investments involved, from the provision of production inputs through retail distribution or export. These impacts in

Paraguay have been negligible because of the small presence of TNCs investing in the agriculture related sector of the country.

142. Despite the importance of the agriculture sector for Paraguay, the lack of substantial FDI in the sector (and indeed elsewhere in the economy) demonstrates the importance of an appropriate business climate that allows for more profitable investments in agriculture and forest based production.
143. Successful agriculture and forest businesses depend on natural resources, productive human resources, competitively priced capital and inputs, and other favorable climate conditions for investments. Without such conditions, investments become too costly and risky while benefits too small and uncertain so that profits are not sufficient to motivate entrepreneurs and investors to act.
144. Agriculture and forest businesses are also affected by many of the conditions that these indexes try to measure. However, due to their special characteristics, it is more useful to try to identify the principal factors that influence businesses in this sector, the relationships among them, and how they impact investment profitability. This modeling helps not only to understand the situations better, but also is critical for the design of actions that can improve the chances for entrepreneurs' success.
145. One example of index that tries to measure the business climate for forest based investments is the Forest Investment Attractiveness Index. The IAIF's purpose is to clarify governments, investors and other stakeholders which are the factors that affect, lead to success, and attract private direct investment, domestic or foreign, to the forestry sector.
146. This Index seeks to measure countries' attraction for direct investment in sustainable forestry business. The IAIF allows: (i) to compare the performance of countries in the same year and the trend over time, (ii) to assist investors to pre-identify the countries where sustainable forest business will most likely be successful, and (iii) to clarify for countries which SUPRA, INTER and INTRA factors most affect their business climate for sustainable forestry investments.
147. Chapter V includes a section that presents the result of the implementation of the Process to Improve the Business Climate for Investment in the Forestry Sector (PROMECIF) for Paraguay. It consolidates the analysis and recommendations, and provides an Action Plan to improve the business climate for forest-based investments in Paraguay. This is an example of how countries can act to improve the business climate by implementing a systematic and cyclical process that includes confirmation of the interest of the country to take steps to make adjustments necessary, the development of diagnosis, definition of a strategy, and the design, implementation, monitoring and evaluation of an Action Plan with selected measures.
148. The study used the results of a survey conducted among stakeholders of the forestry sector of that country for the calculation of the IAIF. Additional analysis deepened the critical factors highlighted by the Index and developed a diagnosis indicating the main problems faced by and opportunities offered to investors interested in sustainable forest businesses in Paraguay. After defining a vision for the forestry business in the country and comparing it with industry trends, a strategy and action plan with five projects to overcome existing obstacles to competitive conditions in the forestry sector were developed. With the implementation of the Action Plan, Paraguay was expected to improve its performance in the

next measurements of the IAIF and become a more attractive country for investment in sustainable forest businesses.

149. **Priority factors for intervention.** Paraguay can improve its performance in the sub-indexes Inter-sectoral and intra-sectoral as much as 18 and 17 points, respectively, to achieve the country's IAIF potential. The priority factors that can contribute most to improve the existing business climate, the country's performance in the IAIF and consequently make it more attractive for investments in forestry are, in descending order of importance: 1. Support for forestry and industrial businesses, 2. Adverse actions; 3. Property rights; 4. Regulations 5. Capital market or access to credit; 6. Labor; 7. Economic infrastructure; and 8. Agricultural policies.
150. **Problems to address and opportunities to exploit.** Paraguayan and foreign investors interested in producing and / or exporting forest products or do other businesses based on natural and planted forests in the country face a number of important issues, but also have some important opportunities. In terms of intra-sectoral factors, they have little support for the implementation of forest business and, in fact, face state policies and actions that are adverse to their businesses generating unnecessary costs and reducing profits. In addition, investors count with few natural forest resources which continue to decline as a result of adverse business climate for their sustainable use. Similarly, such conditions have not favored the formation of high-yield forest plantations that can serve as a basis for export or for any future deployment of industries that rely on such inputs. Forest Vocation Lands are not clearly identified and policies that promote their sustainable use are not in place. This makes TVFs generate erosion and surface runoff while Non-Forest Vocation Lands which could receive more flexible agricultural uses (in accordance with the relative competitiveness of each use on specific sites and the interests of the landowner), are underutilized generating opportunity costs for its owners and society.
151. In terms of inter-sectoral factors, investors are faced with costly requirements for the establishment and operation of their business. They also have no clarity or certainty that the ownership of land and other properties will be respected and protected by the state, which is a staple for any business development strategy as forest timber production requires investments in medium to long term to be sustainable. Investors also have no access to financial resources from development or commercial banks in the quality, timeliness, and quantity to establish or operate the various types of forest business that exist. The Labor factor also indicates that the investor has to face difficult and expensive regulation for recruitment and human resource management, and that labor productivity is relatively low.
152. In addition, there are few forestry workers and professionals with the skills and knowledge of high-performance production processes. Investors will also face high transport costs in certain areas of the country that can prevent or lessen lucrative investment returns materially. Finally, Investors interested in the forestry sector will realize that various agricultural policies distort the costs and benefits by privileging agricultural investments and making forest investments less competitive.
153. On the side of **opportunities**, the country has relatively stable Supra sectoral factors, and regulations for foreign investment and the tax burden are particularly competitive. Investors will not face materially restrictive policies for forest plantations or their uses. Capital flows and foreign investment factors are also relatively favorable. There is also the physical existence of land with good soil and climate conditions for forest plantation and

availability in multiple locations of abundant electricity at competitive cost. The country is located close to major consumers of forest products whose markets are relatively open for export provided Paraguay can deliver such products at competitive prices. Finally, Paraguay has a traditional timber sector with potential to modernize and allow the country to enter niche markets that require more sophisticated products with high value added and have higher returns per unit produced.

154. **The vision for the future of forestry businesses in Paraguay.** Members of the PROMECIF's Coordinating Committee defined that sustainable forest business in Paraguay can:
- a. "Contribute to sustainable development and poverty alleviation in the country through the production of forest goods and services for export and domestic consumption; the generation of income opportunities, jobs and foreign exchange; and the improvement of environmental quality as a result of better land use.
  - b. To do this, Paraguay can be seen, in the near future, as a major producer and exporter of products and services associated with forest plantations with high productivity and with sustainable use of remaining natural forests resulting from the action of a dynamic and competitive private sector. ..."
155. **Strategy and Action Plan.** The recommended strategic intervention for Paraguay seeks to improve the business climate for investments in the forestry sector so that it contributes to achieving the stakeholders' vision of becoming a major exporter of forest products. This is expected to result from increased investments in the productive chain, which in turn can maximize the contribution of the sector to the development of the country's economy.
156. The Plan of Action prepared to implement the strategy was organized as an investment program that includes 5 projects. Briefly, the program seeks to increase the level of direct investment in sustainable forest businesses. Each project contributes to the end of the program with actions that seek to make the identified business climate critical factors more conducive to sustainable forest investments. The 5 projects developed are: 1. Support sustainable use of TVF, natural forests more competitive, and effectively protected ecosystems, 2. Competitive and expanded forest plantations; 3. Extra-sectorial factors supporting forest business, 4. Improved forest sector governance, and 5. Forest business development services delivered.
157. The total estimated cost for the program was USD18.9 million. It should be noted, however, that these costs do not include all the investments necessary and sufficient for the improvement of all factors affecting the business climate in this first stage. Budgeted activities in the Action Plan are those that the State Forestry Authority could execute as part of its typical mandate. Therefore, the program does not include costs of private sector or other government agencies such as the costs for improved transport infrastructure, to clarify land titles and titling, for bank lending to forest investors, to implement private business development services provision, or similar.
158. To promote investment and the sustainable development of Paraguay's agriculture and forest based businesses and take advantage of its full potential, it is recommended the adoption of business climate improvement actions. These actions seek to improve the profitability of agriculture and forest based businesses. The potential for substantial

profitability leads entrepreneurs to an increased level of investments, which in turn can result in positive economic, social, and environmental impacts.

159. The creation and systematic analyses of an Agriculture Investment Attraction Index and the adoption of a business climate improvement methodology similar to PROMECIF could facilitate the understanding of the factors and conditions that facilitate FDI in a given country or region. For large countries, the creation of an index to evaluate sub national administrative units should help to focus interventions with greater consideration for the regional differences.

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